

Fig. 1A

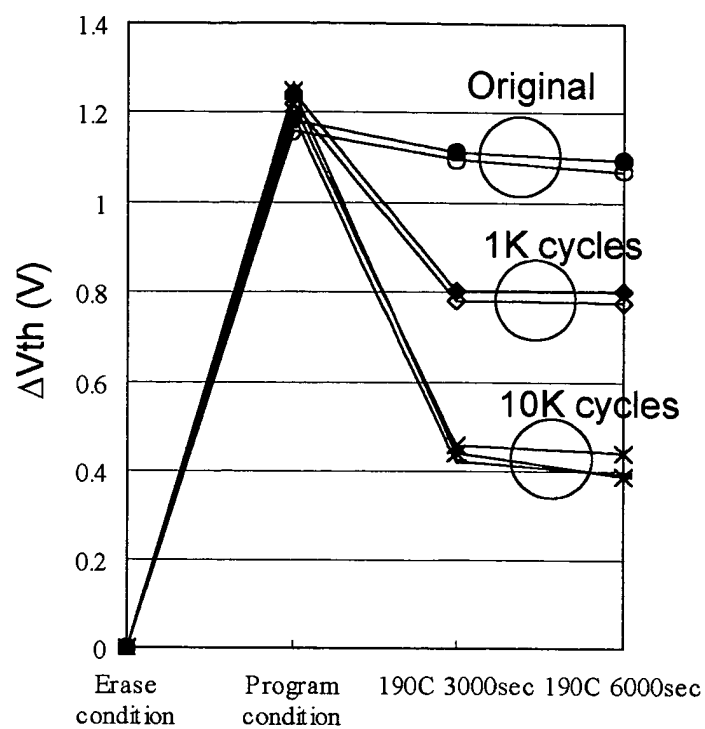


Fig. 1

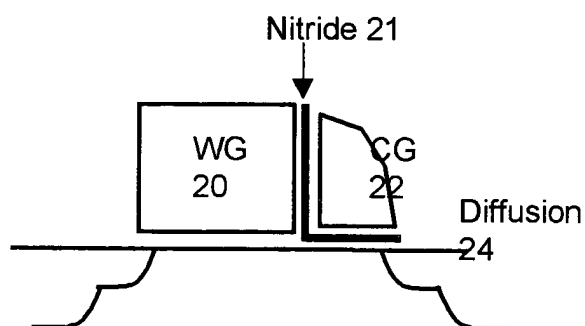


Fig.2

Prior Art

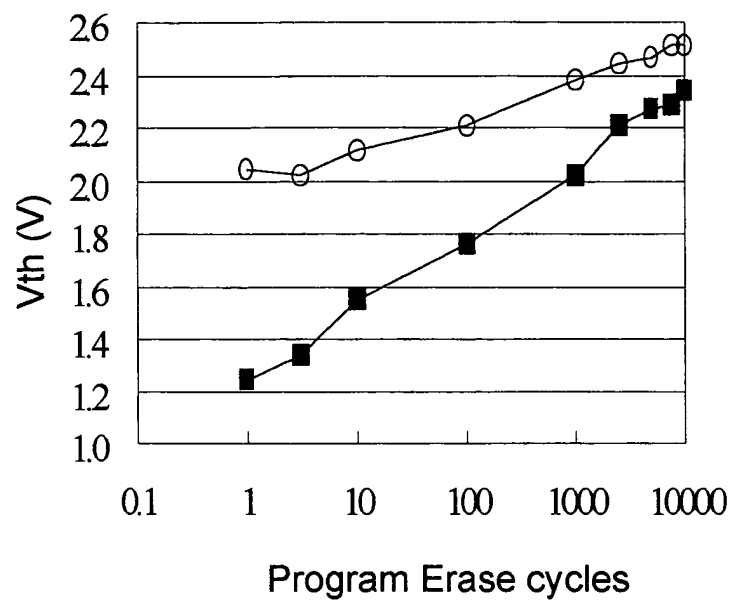


Fig.3

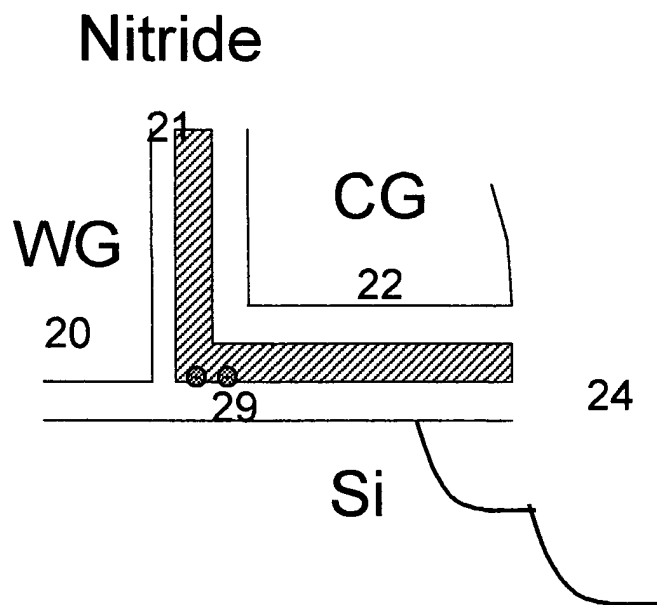


Fig.4

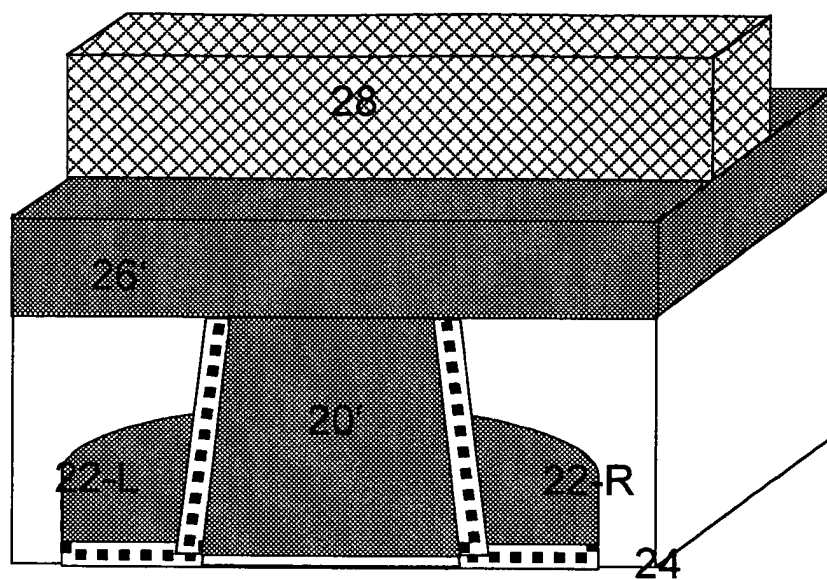


Fig. 5A

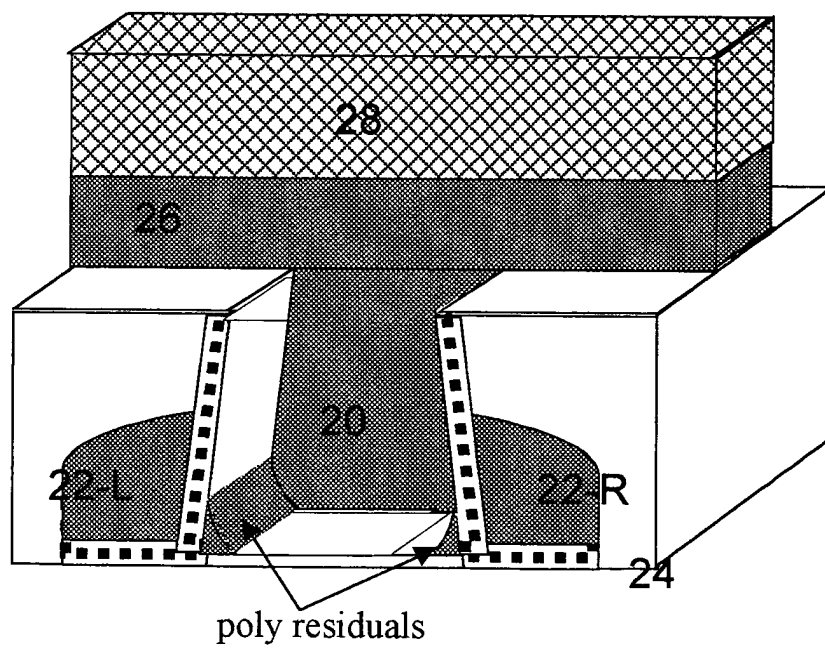


Fig. 5B

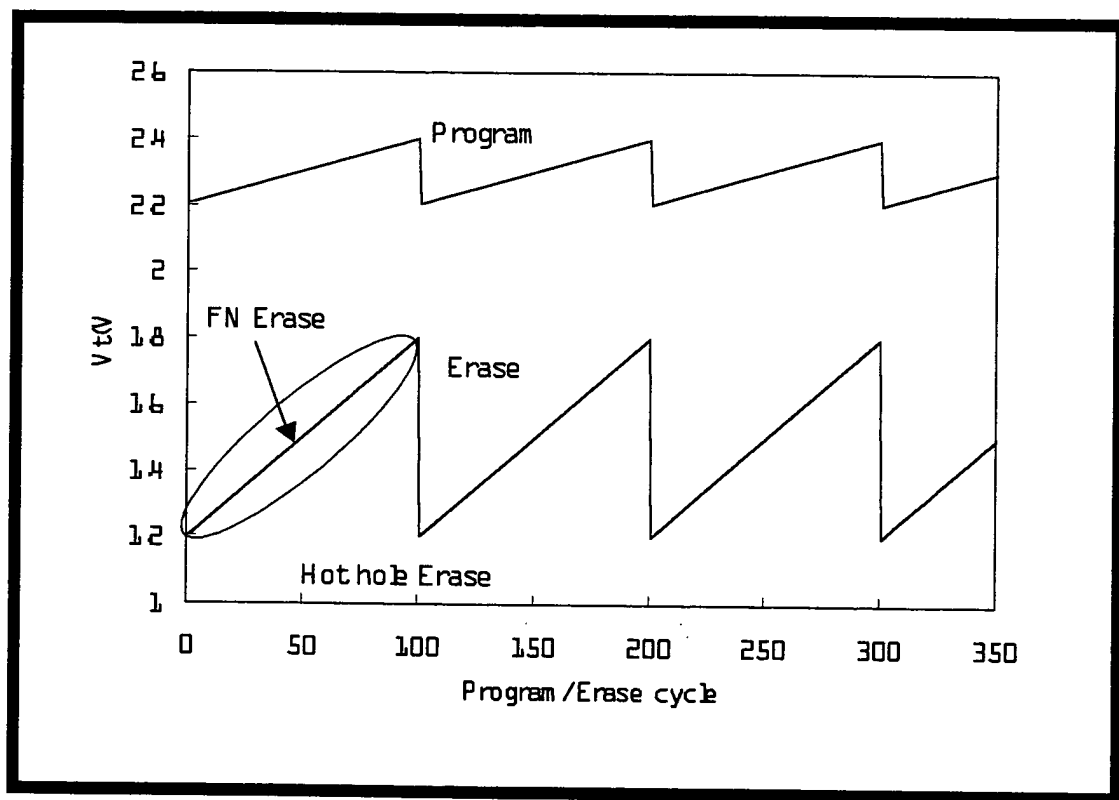


Fig.6

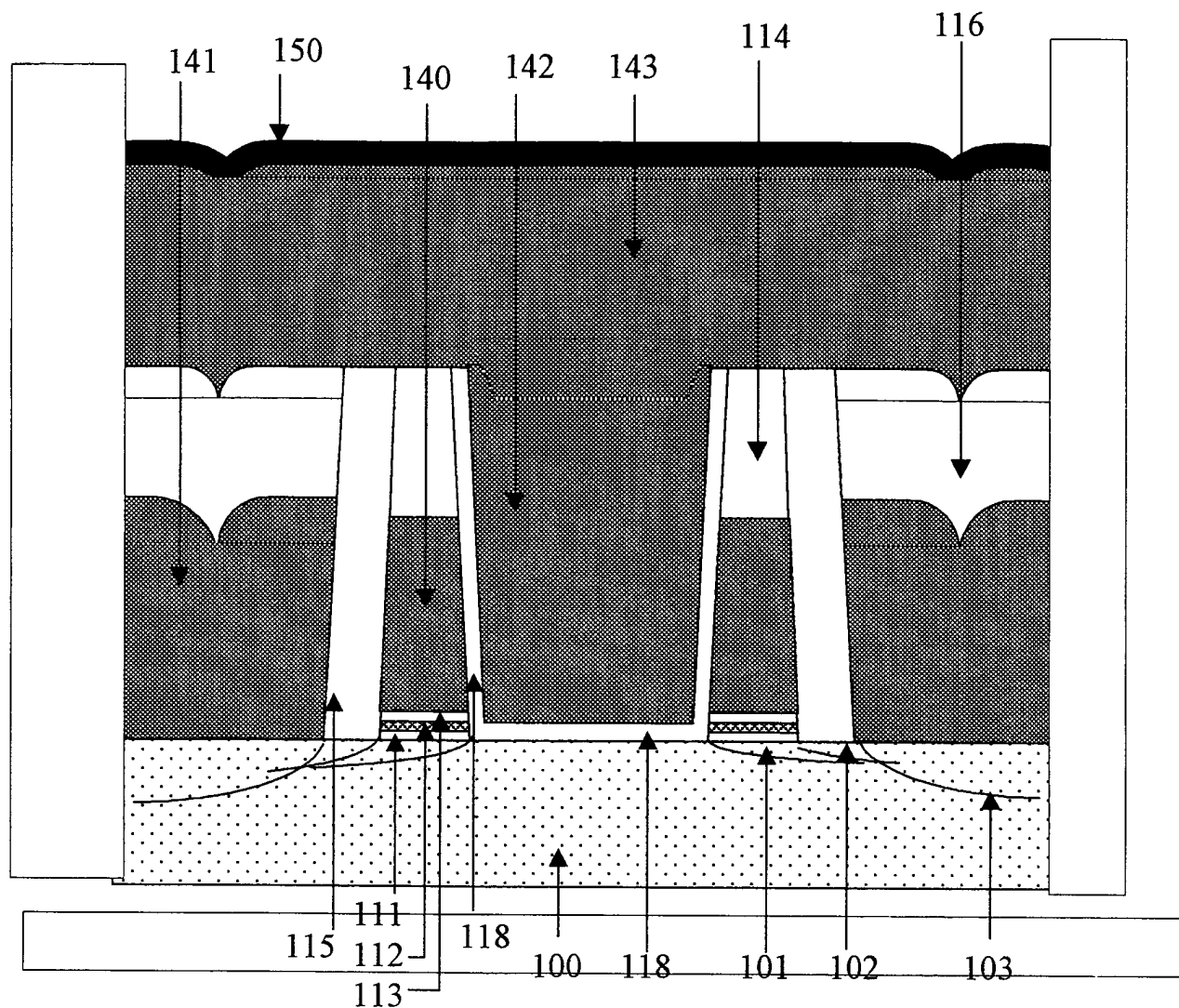


Fig.7

100 Substrate

101 Control Gate Channel

102 Memory LDD

103 Memory diffusion

111 ONO Bottom oxide

112 ONO Nitride

113 ONO Top oxide

114 CG Oxide Mask

115 Memory Spacer

116 Recess Oxide

117 CG-WG isolation

118 Word Gate Oxide

140 Control Gate Poly Si

141 Raised Diffusion Poly Si

142 Word gate

143 Word Line

150 Word Line Salicide

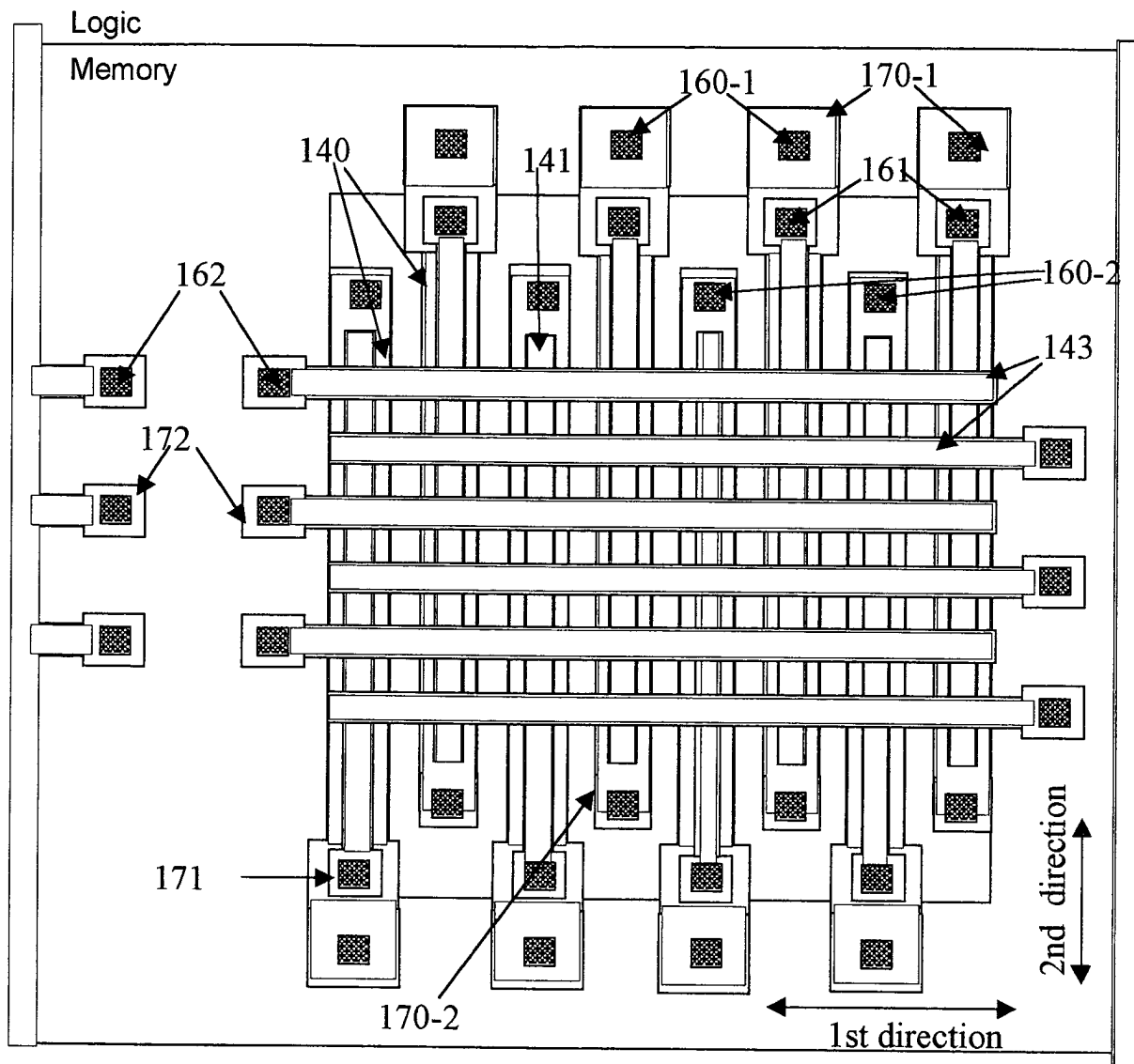


Fig.8

160-1 Control Gate Contact type 1

160-2 Control Gate Contact type 2

161 Bit line (Diffusion) Contact

162 Word line Contact

170-1 Control Gate Contact type 1 Cover

170-2 Control Gate Contact type 2 Cover

171 Bit line (Diffusion) Contact Cover

172 Word line Contact Cover

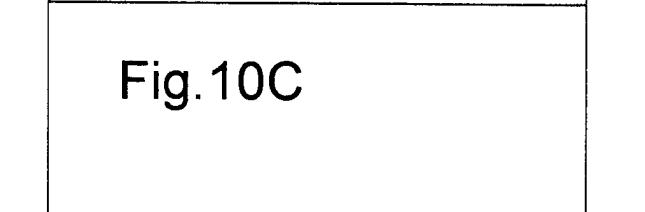
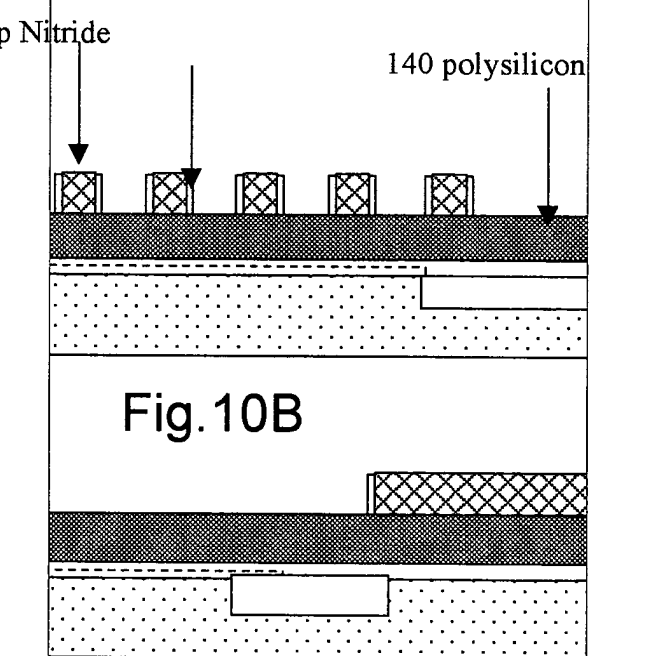
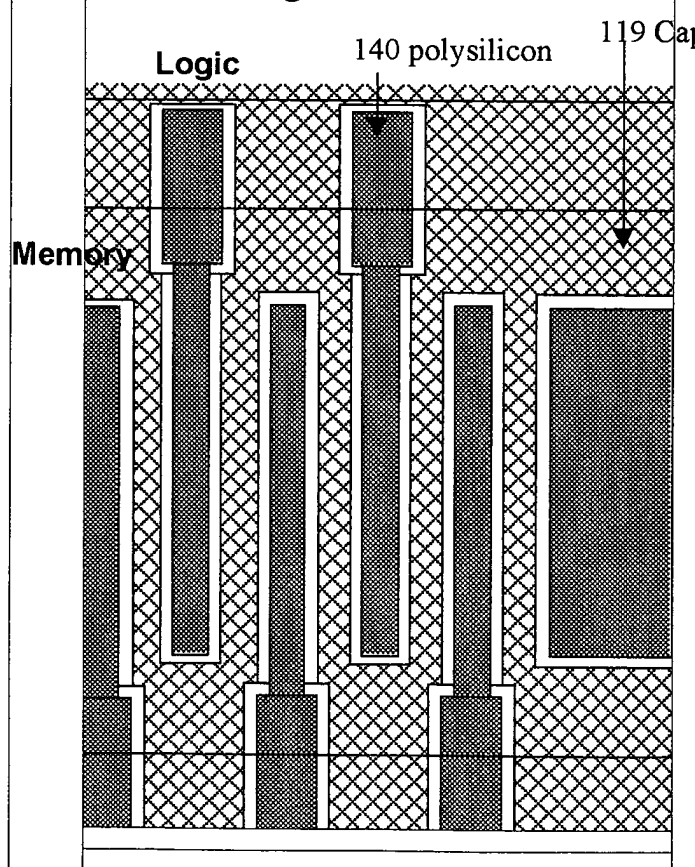
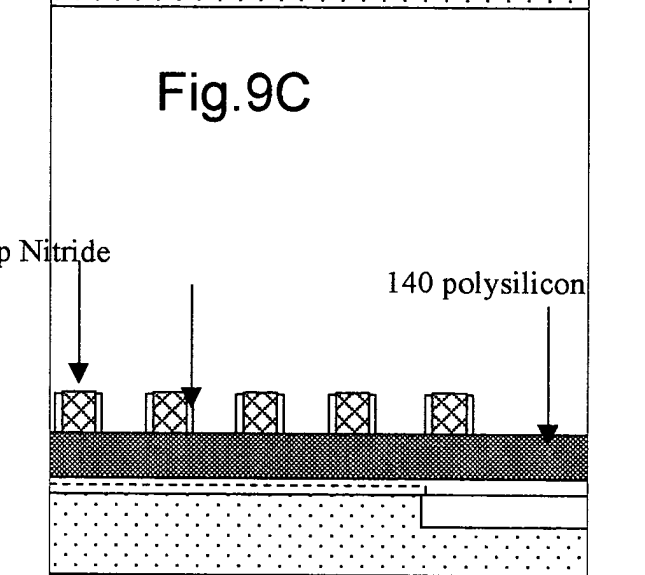
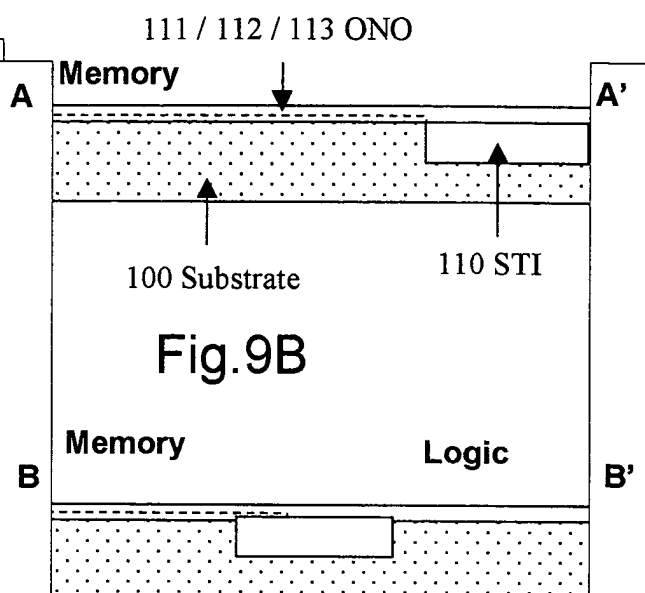
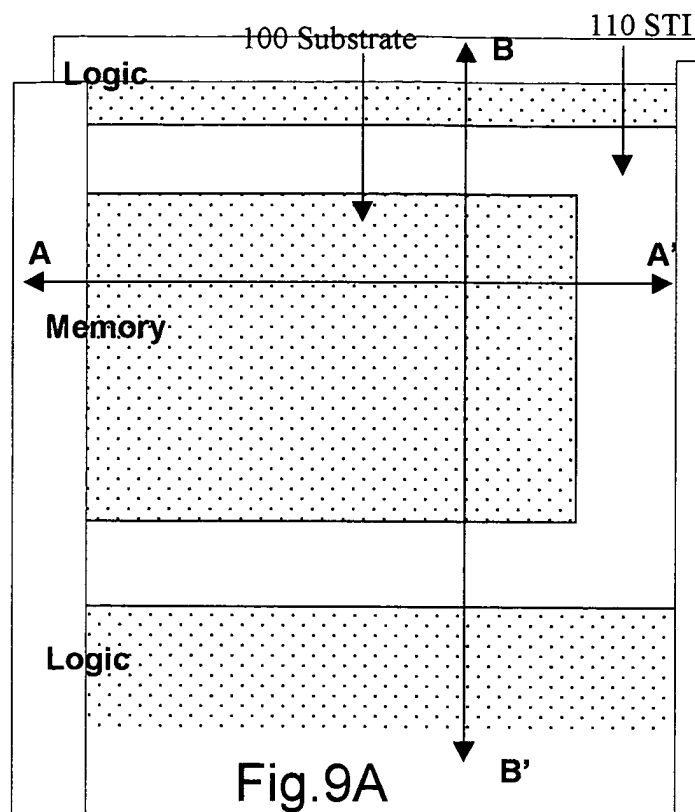
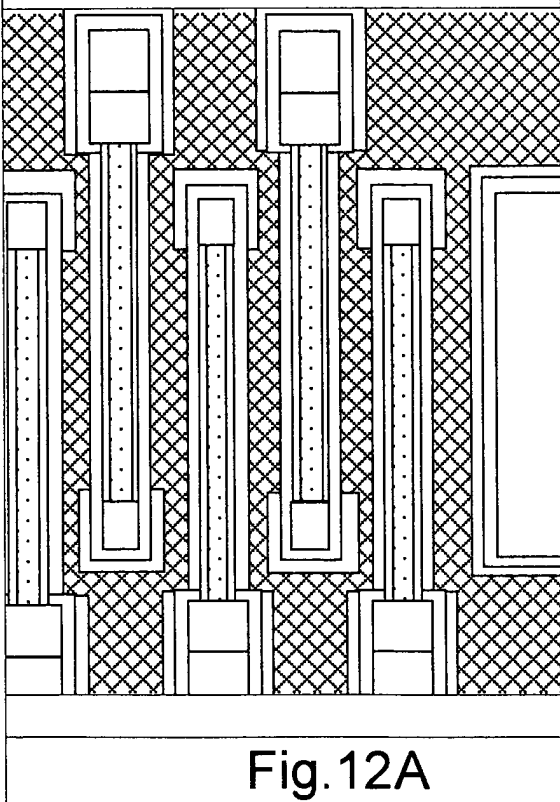
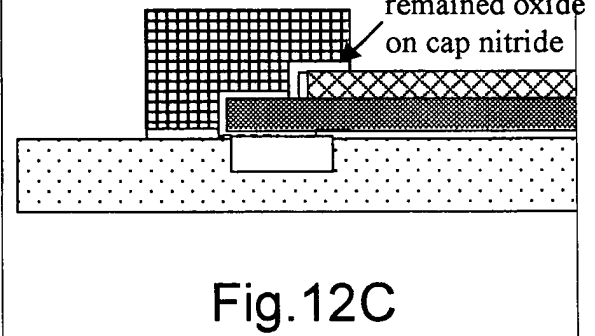
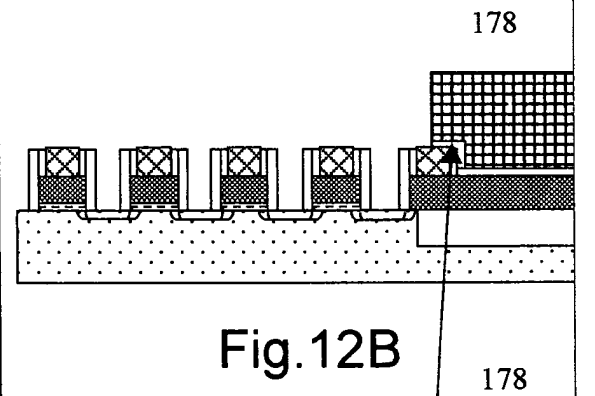
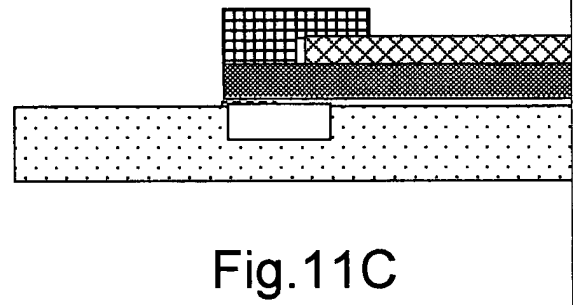
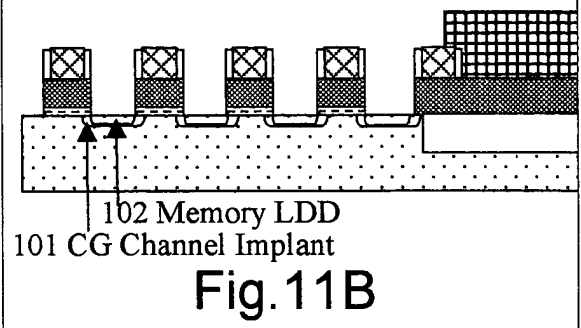
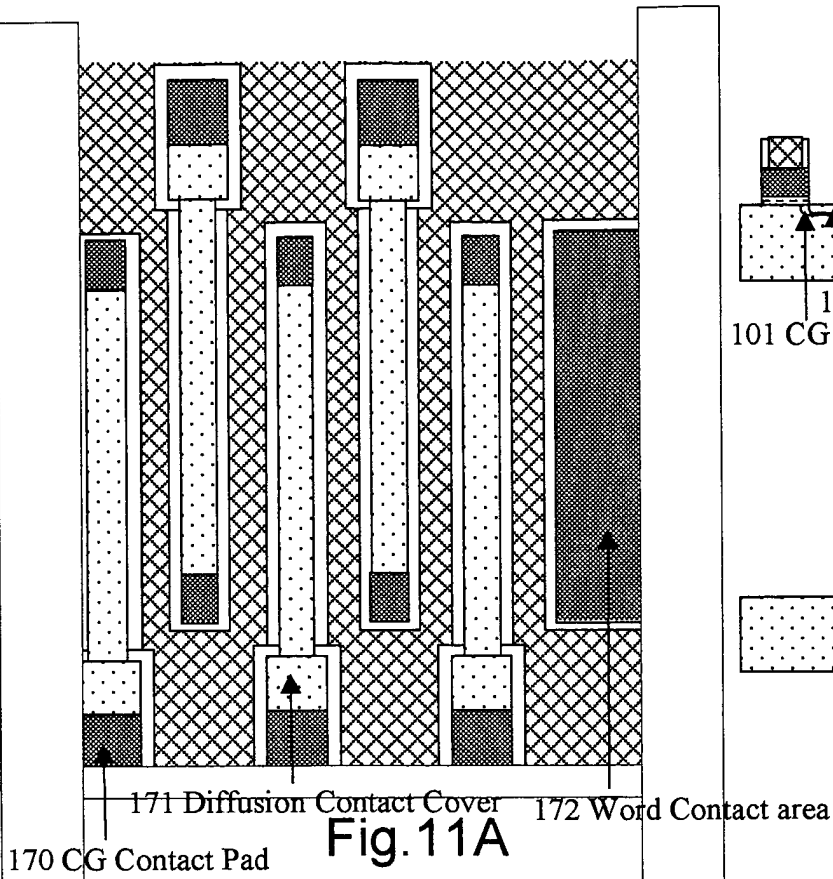
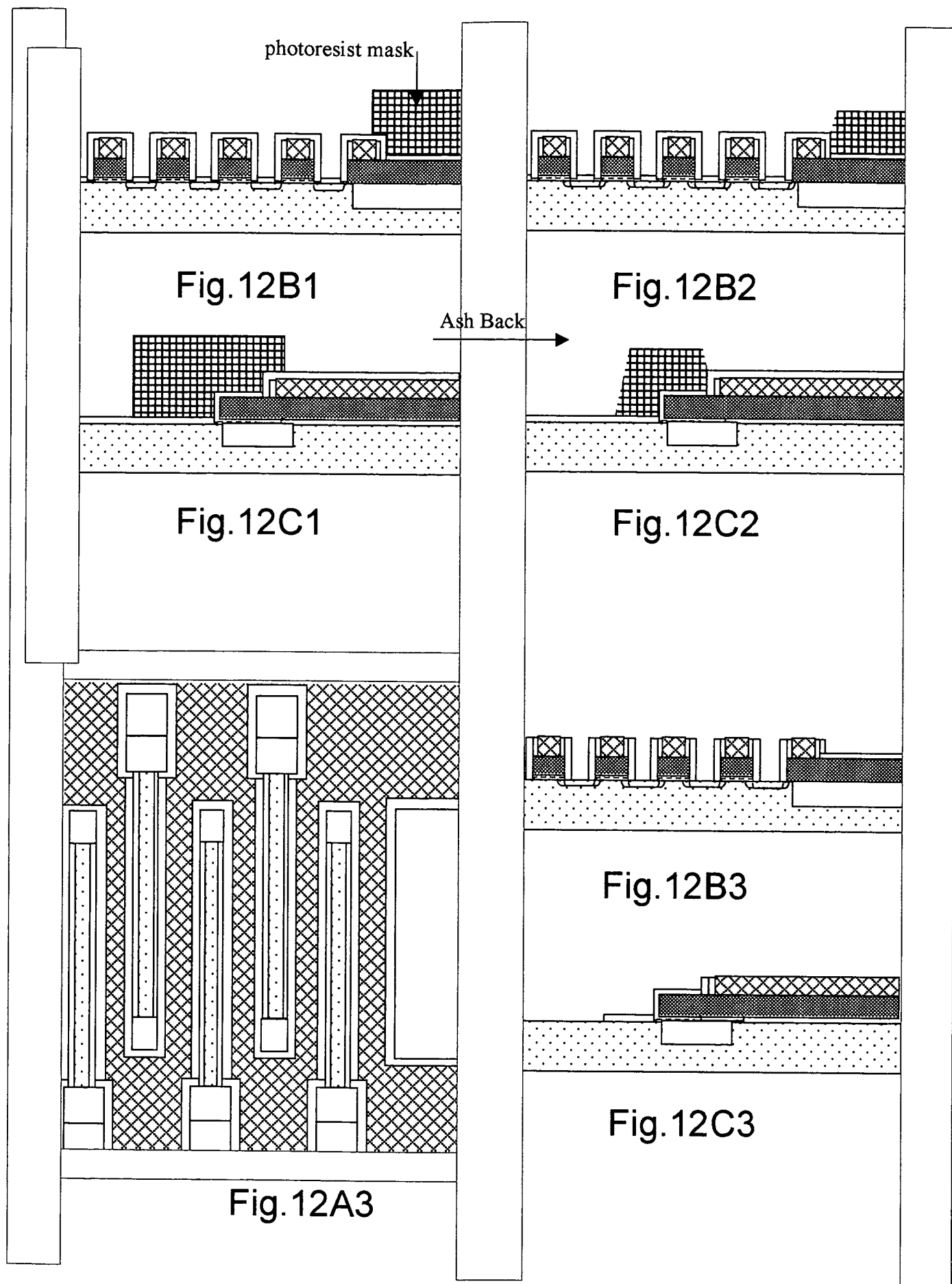


Fig. 10A





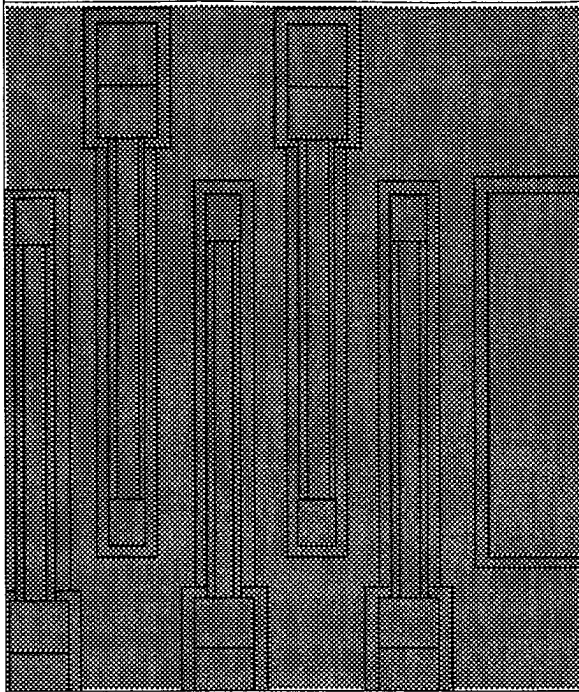


Fig.13A

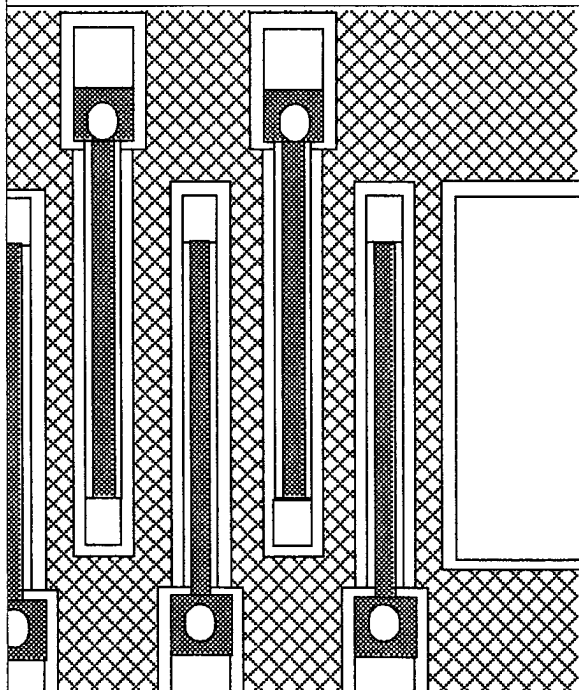


Fig.14A

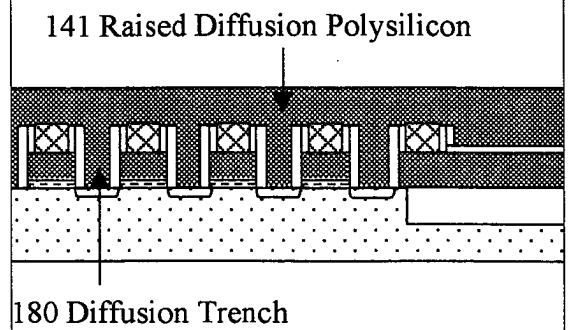


Fig.13B

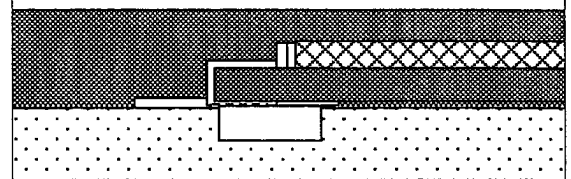


Fig.13C

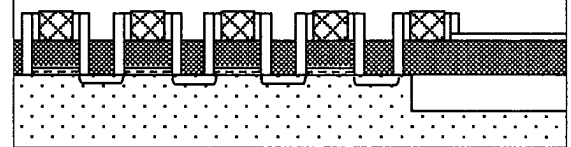


Fig.14B

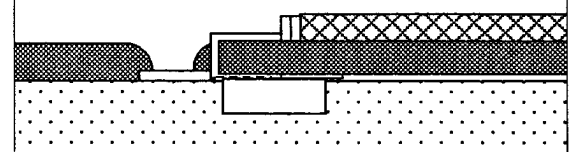


Fig.14C

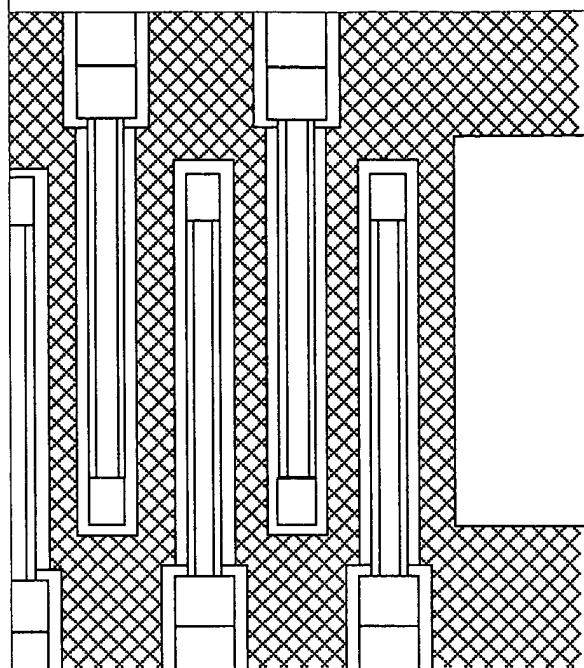


Fig.15A

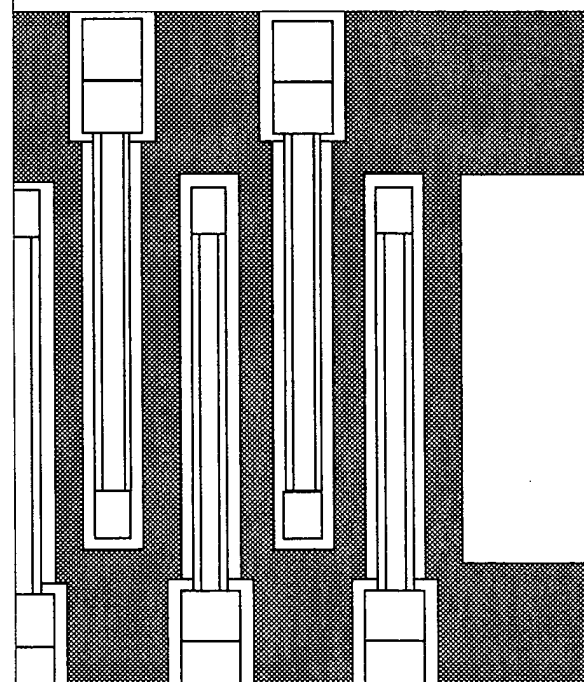


Fig.16A

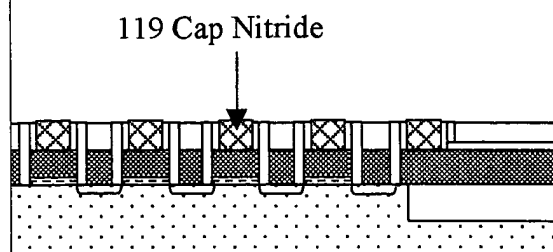


Fig.15B

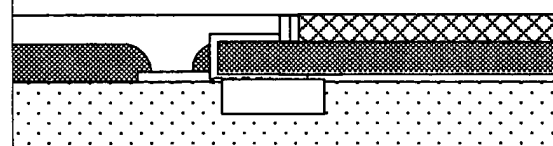


Fig.15C

142 Word Gate Trench

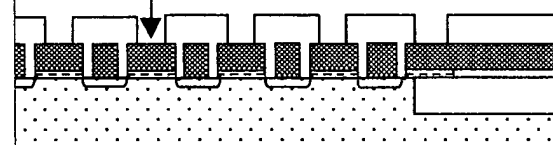


Fig.16B

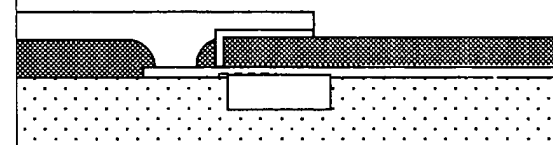
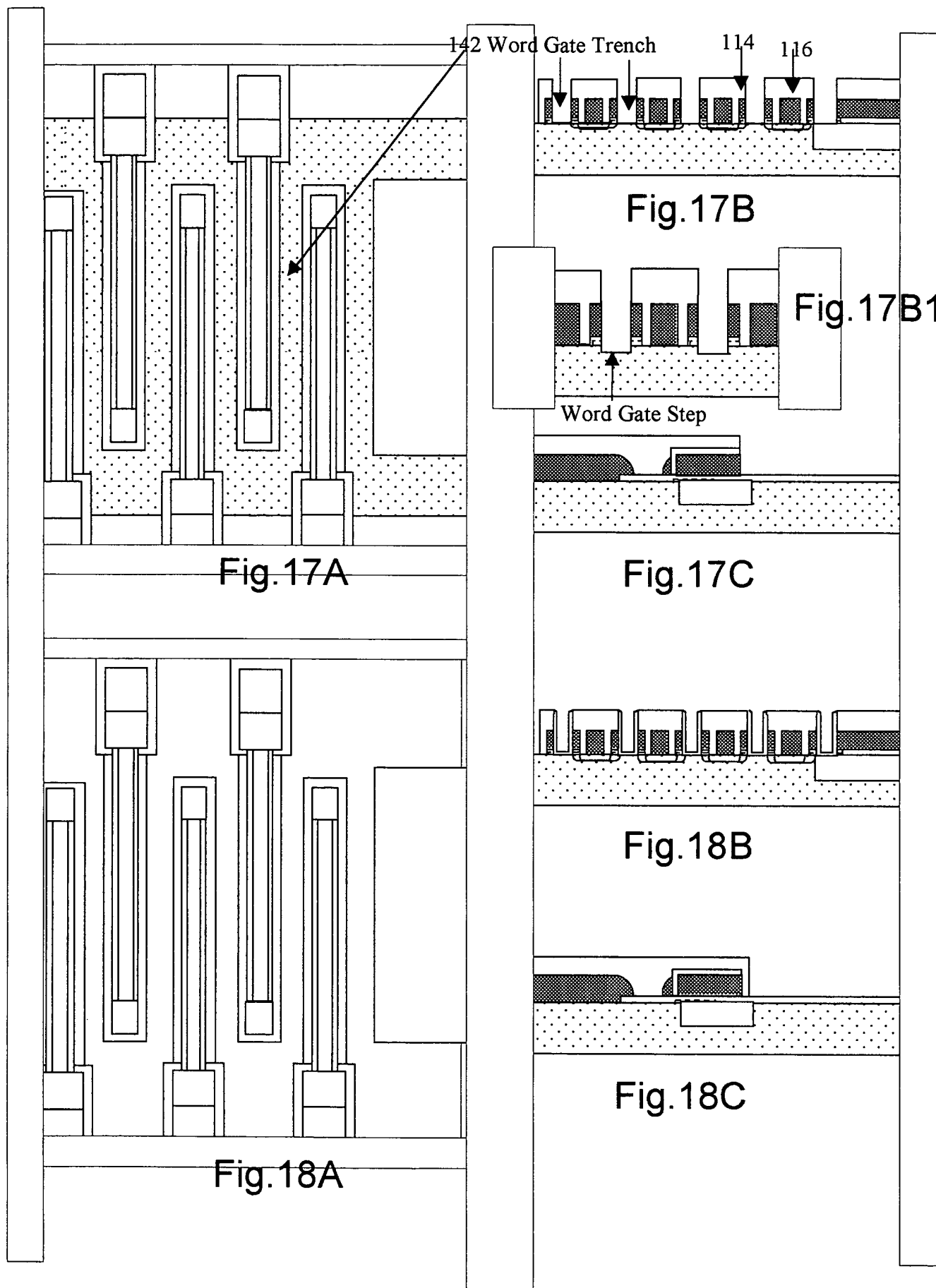


Fig.16C



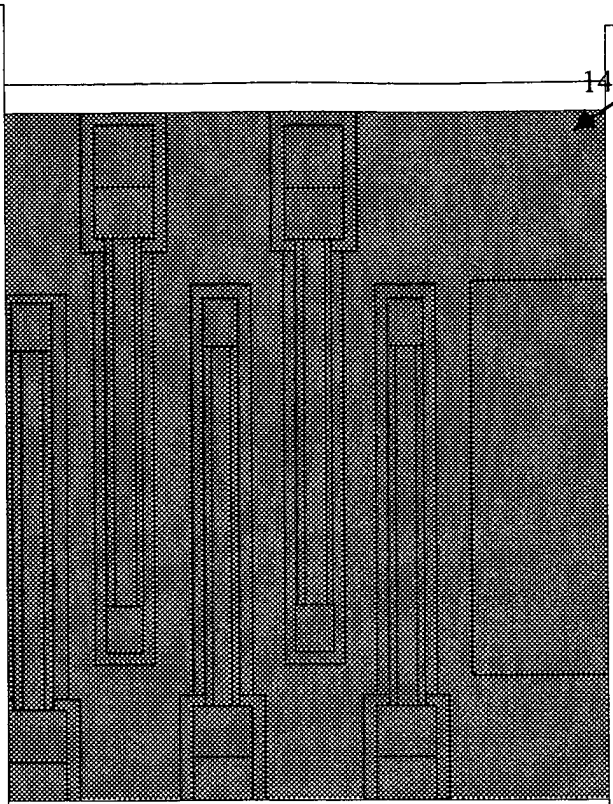


Fig. 19A

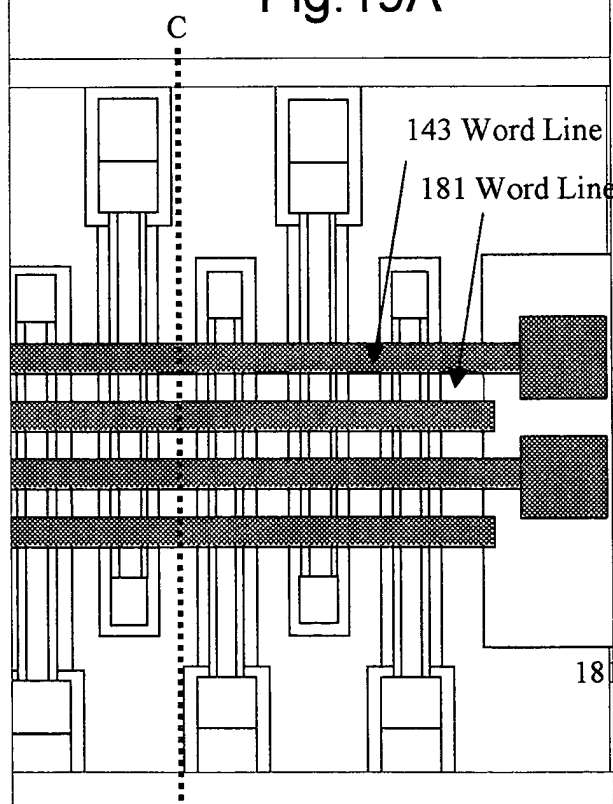


Fig. 20A

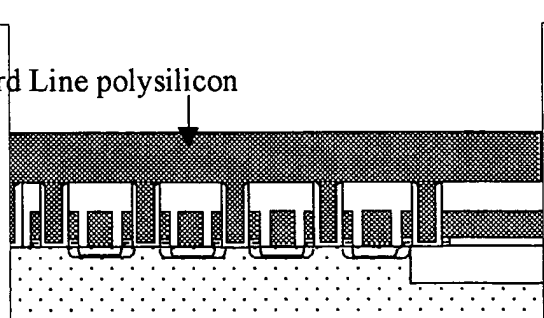


Fig. 19B

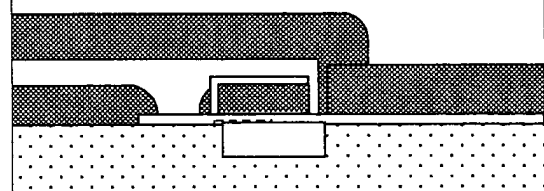


Fig. 19C

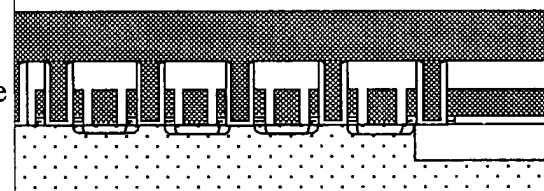


Fig. 20B

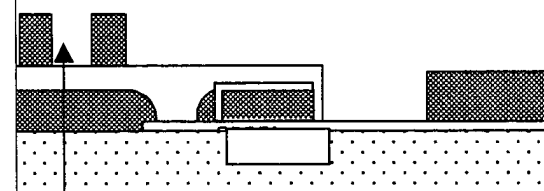


Fig. 20C

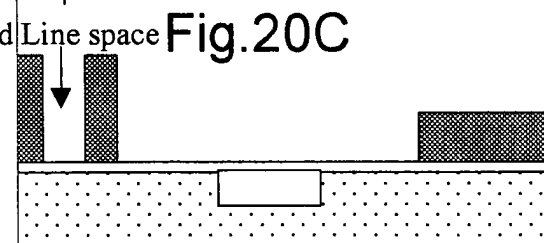
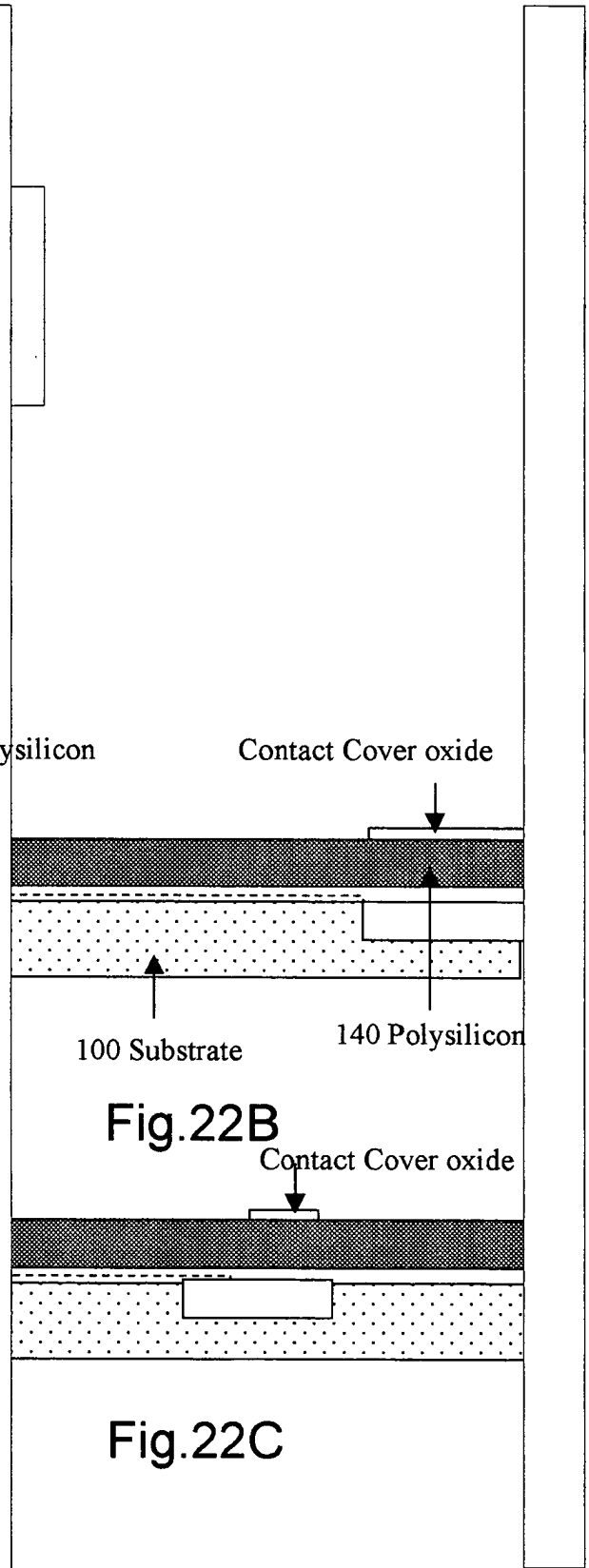
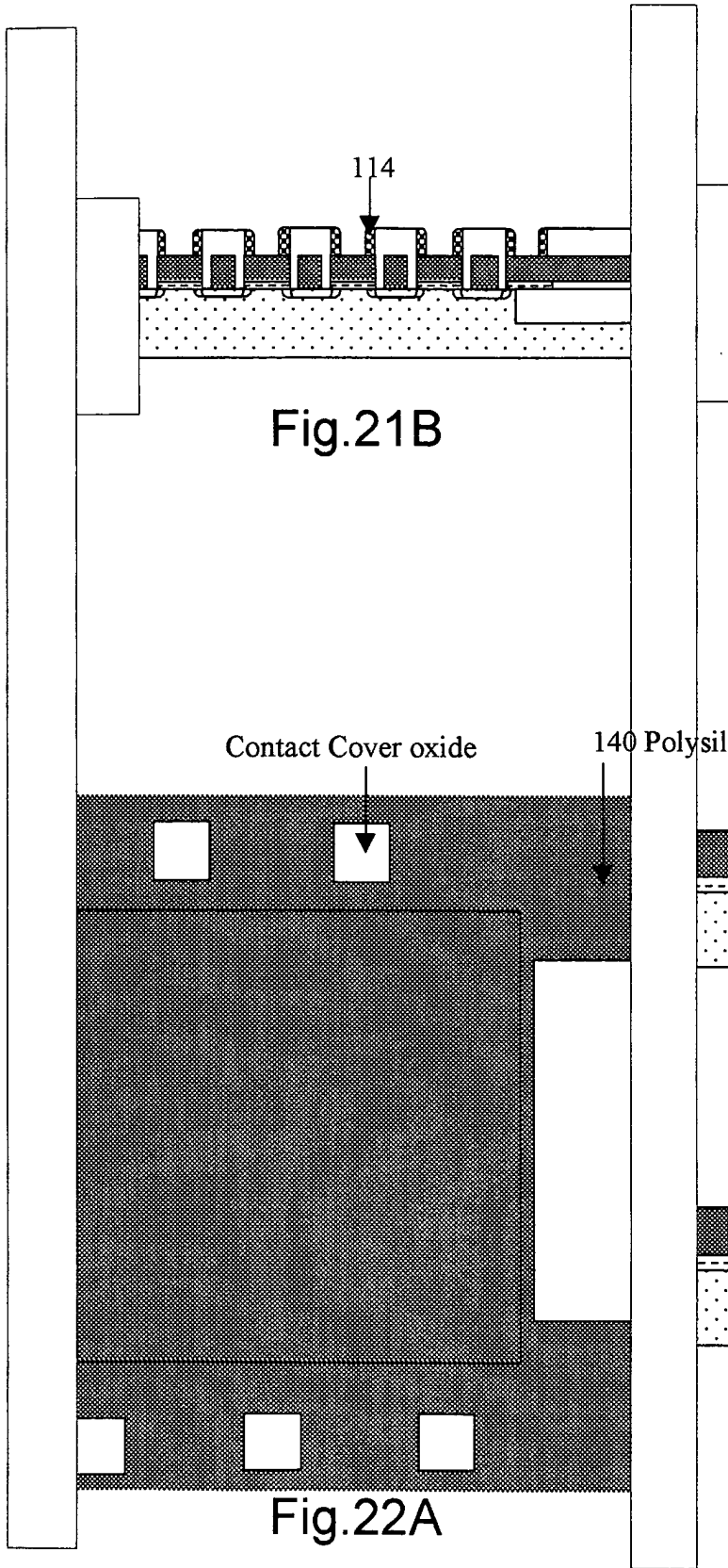
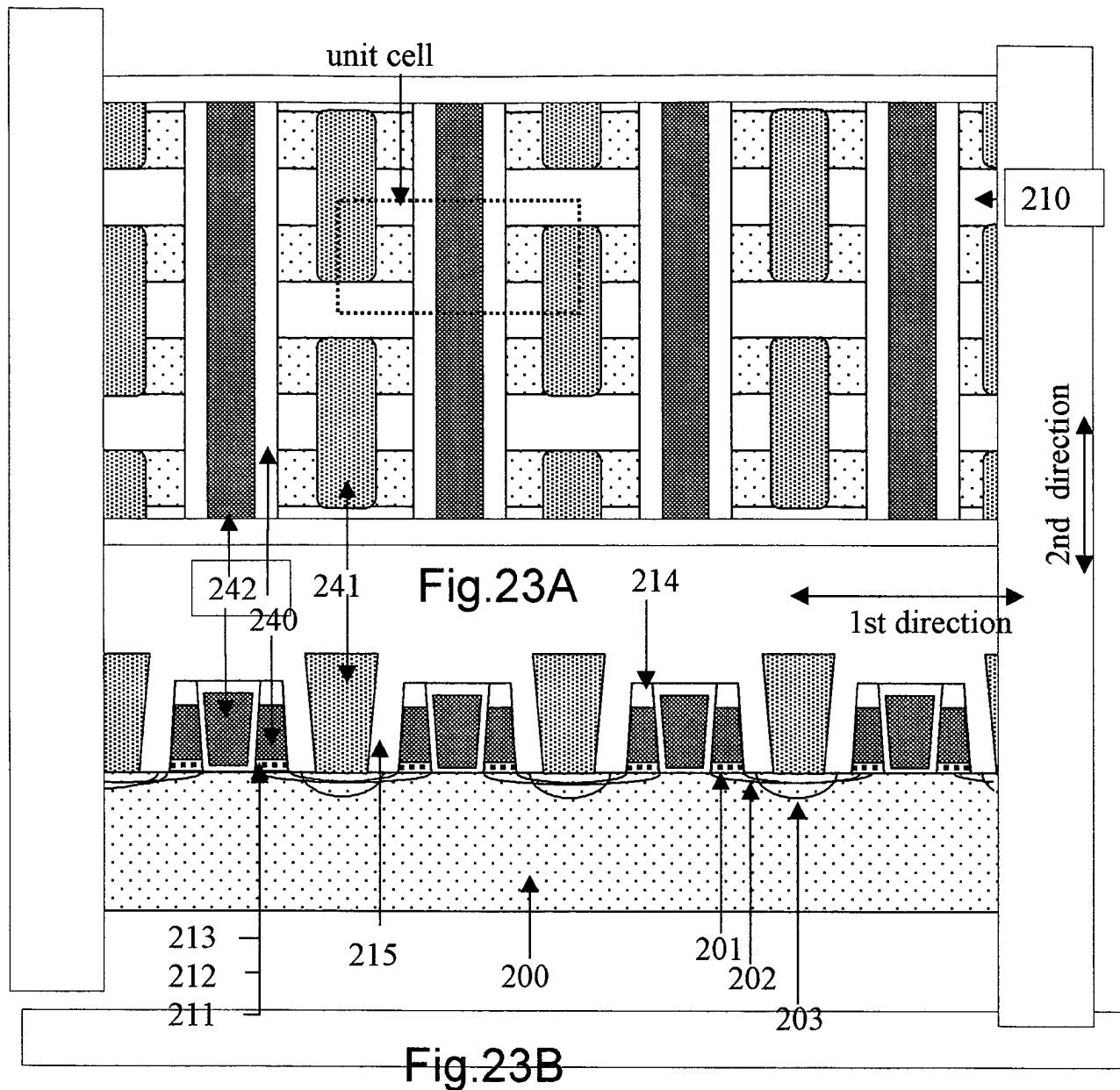


Fig. 20C1





- | | | |
|--------------------------|----------------------|--------------------------|
| 200 Substrate | 211 ONO Bottom oxide | 240 Control Gate Poly Si |
| 201 Control Gate Channel | 212 ONO Nitride | 241 Local wiring |
| 202 Memory LDD | 213 ONO Top oxide | 242 Word gate/Line |
| 203 Memory diffusion | 214 CG Oxide Mask | |
| | 215 Memory Spacer | |
| | 216 CG-WG isolation | |
| | 217 Word Gate Oxide | |
| | 218 Word cap oxide | |

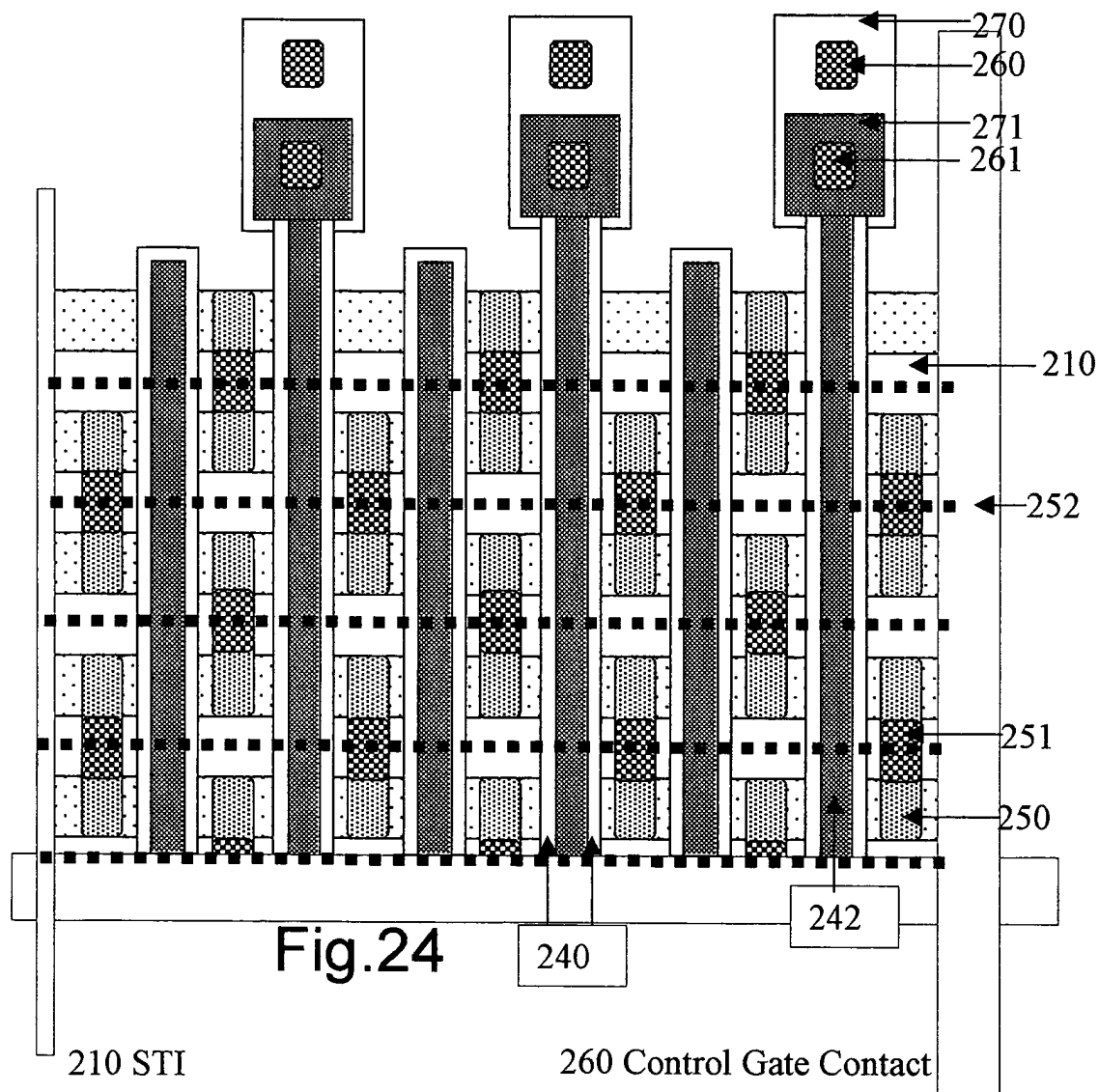


Fig.24

210 STI

240 Control Gate

242 Word Line

250 Local Wire (bit bridge)

251 Bit line Contact

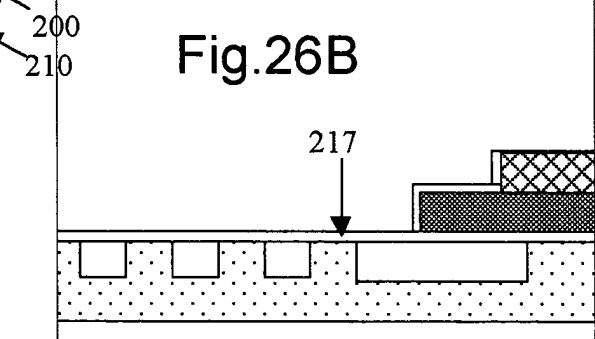
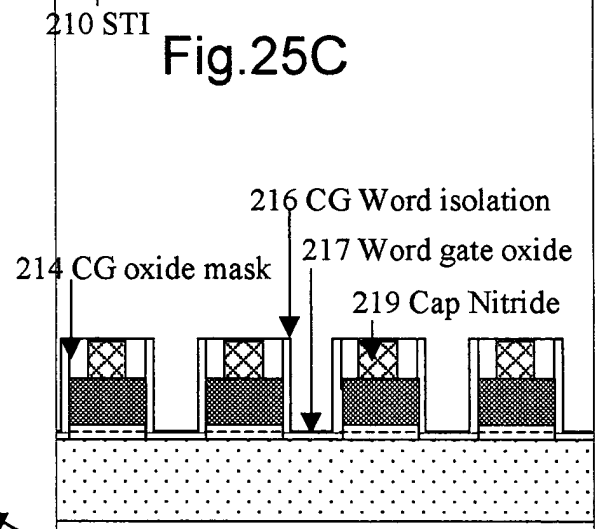
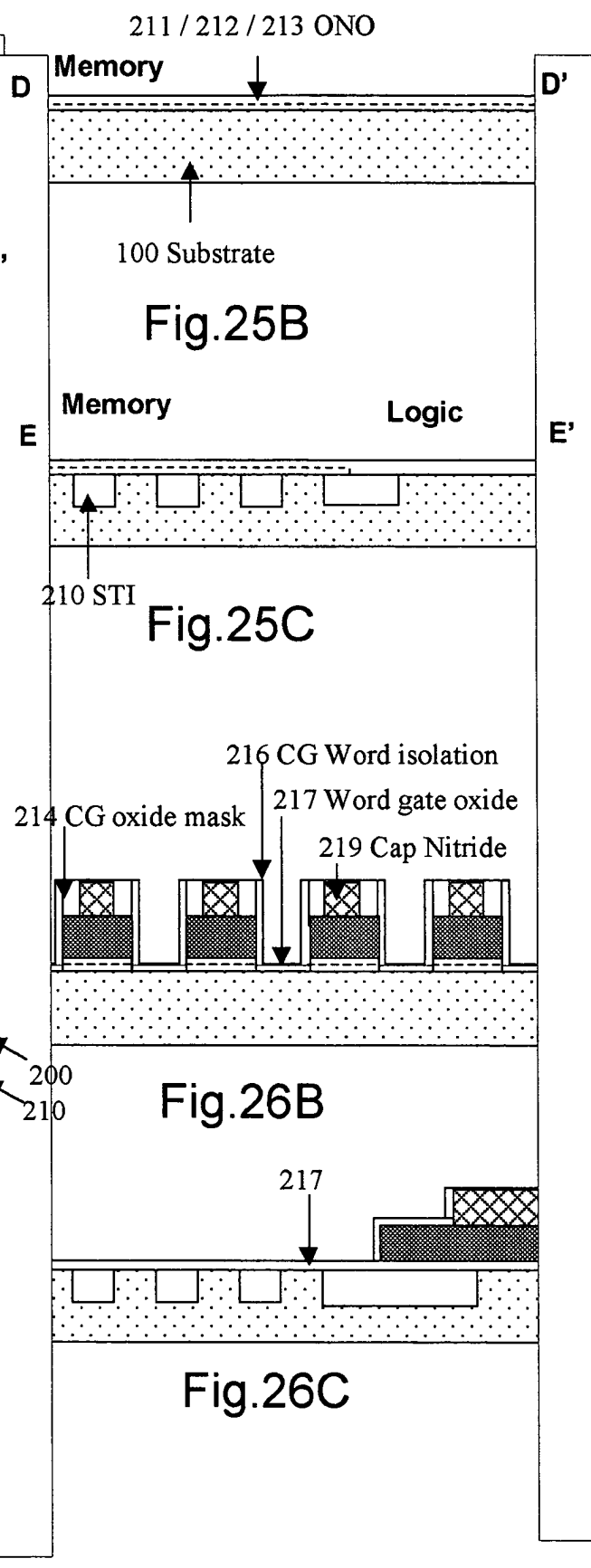
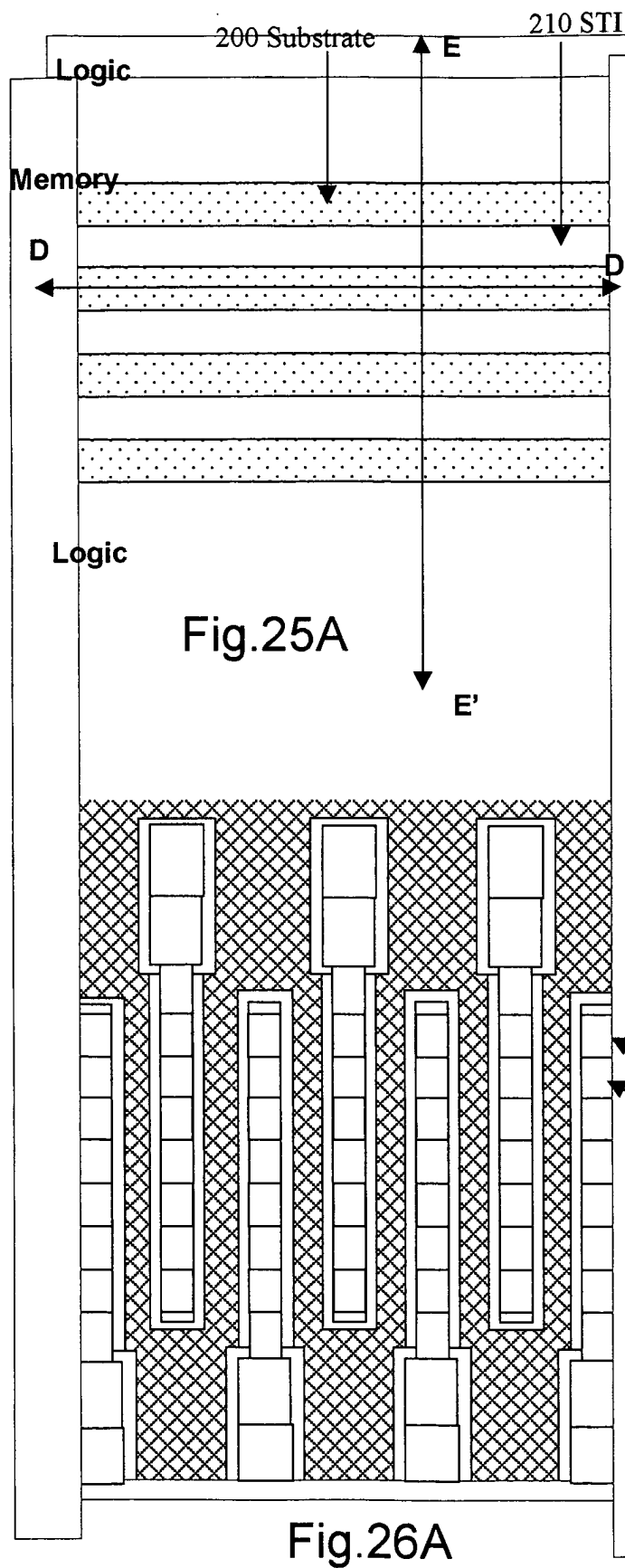
252 Bit Line (1st Metal)

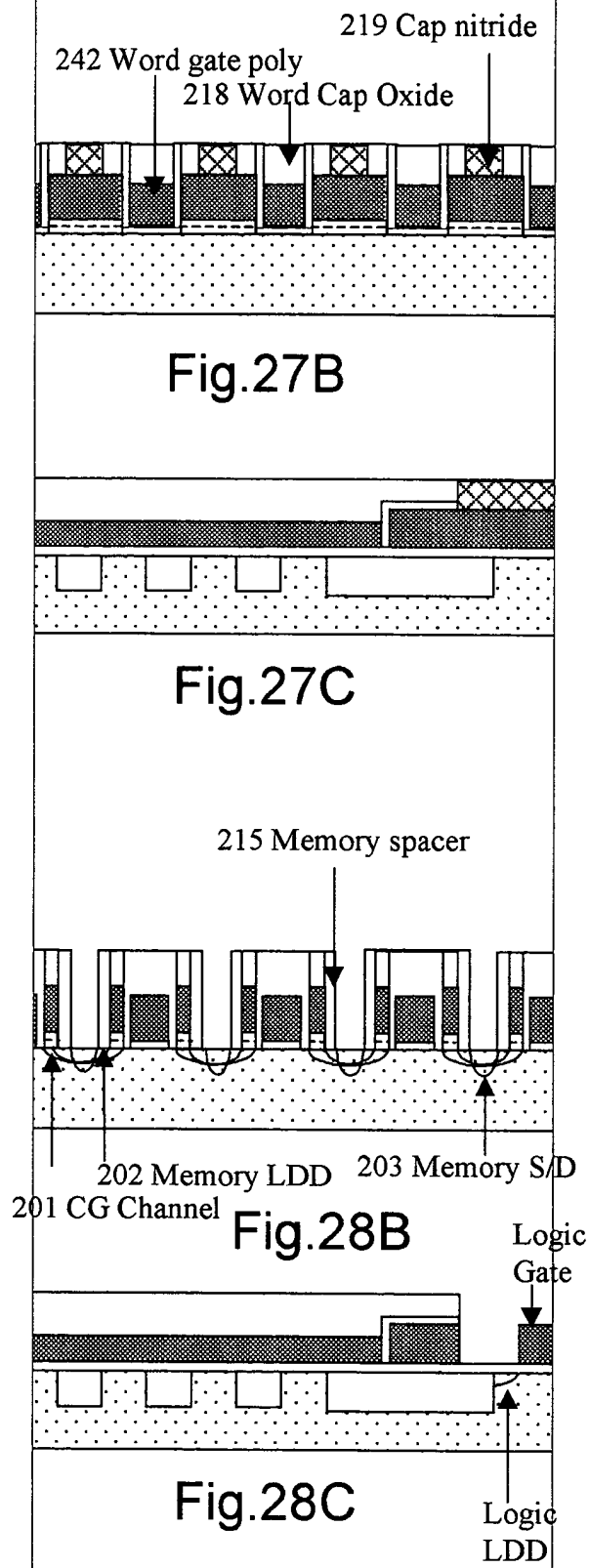
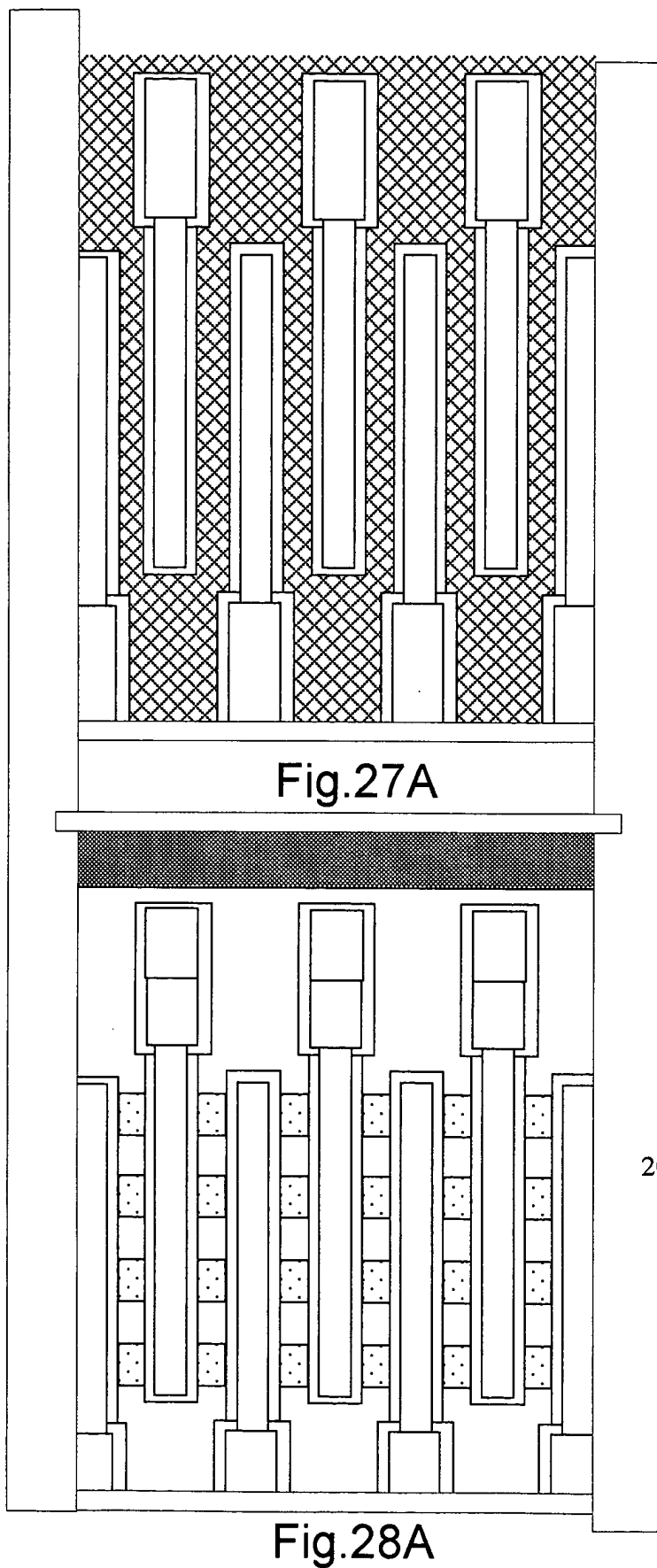
260 Control Gate Contact

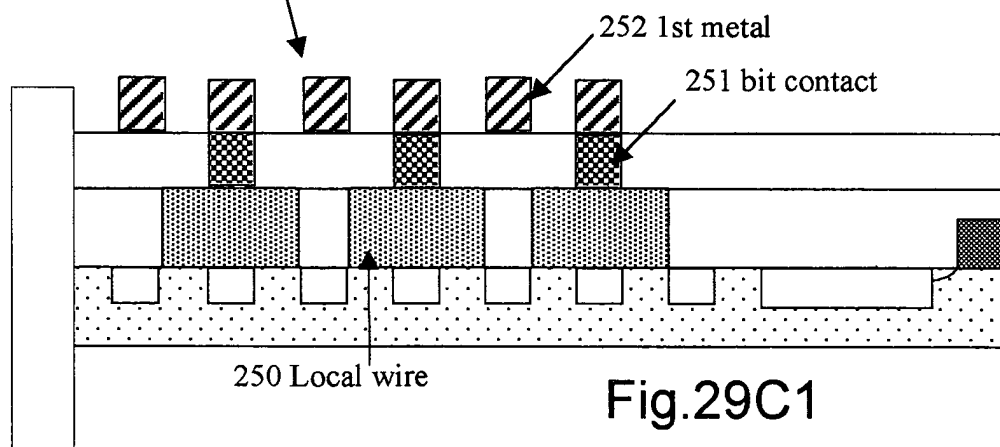
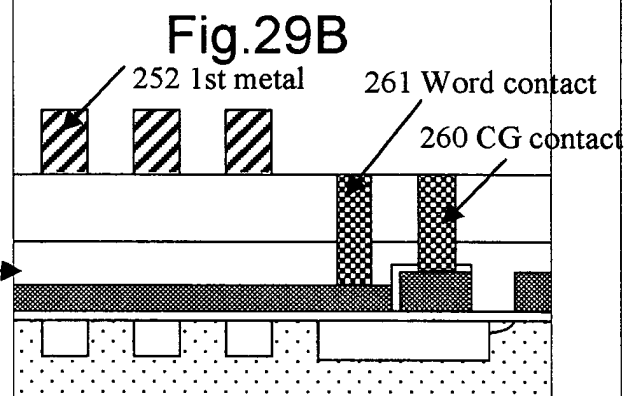
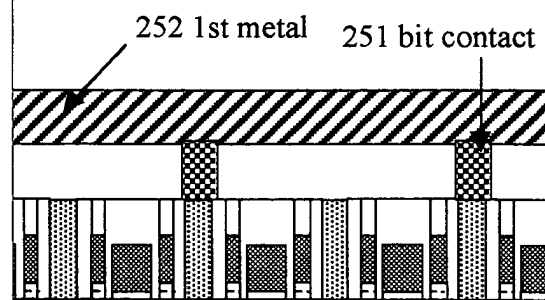
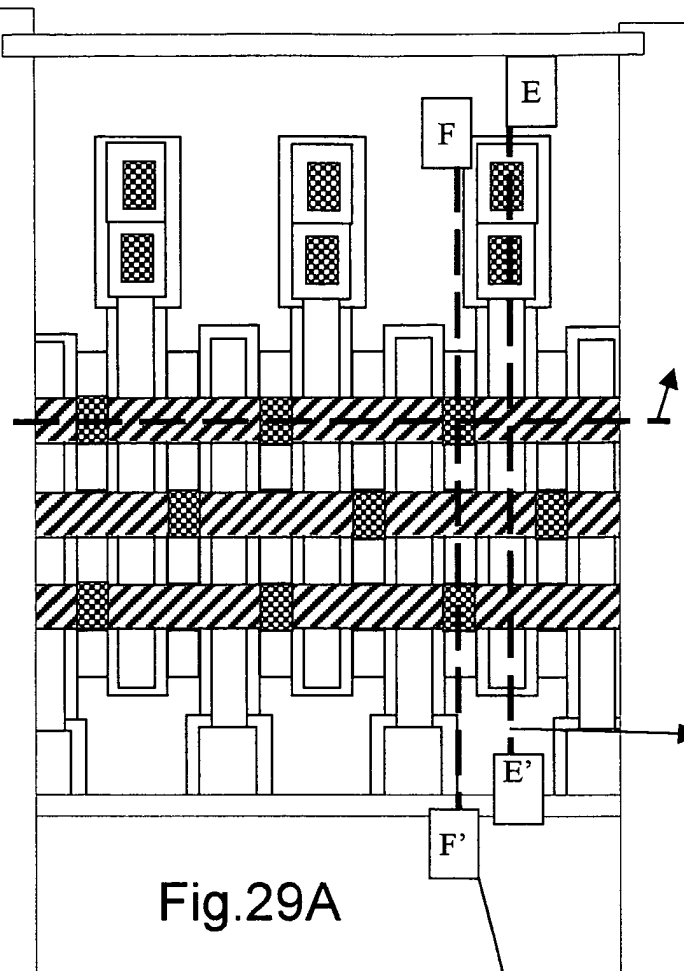
261 Word Line Contact

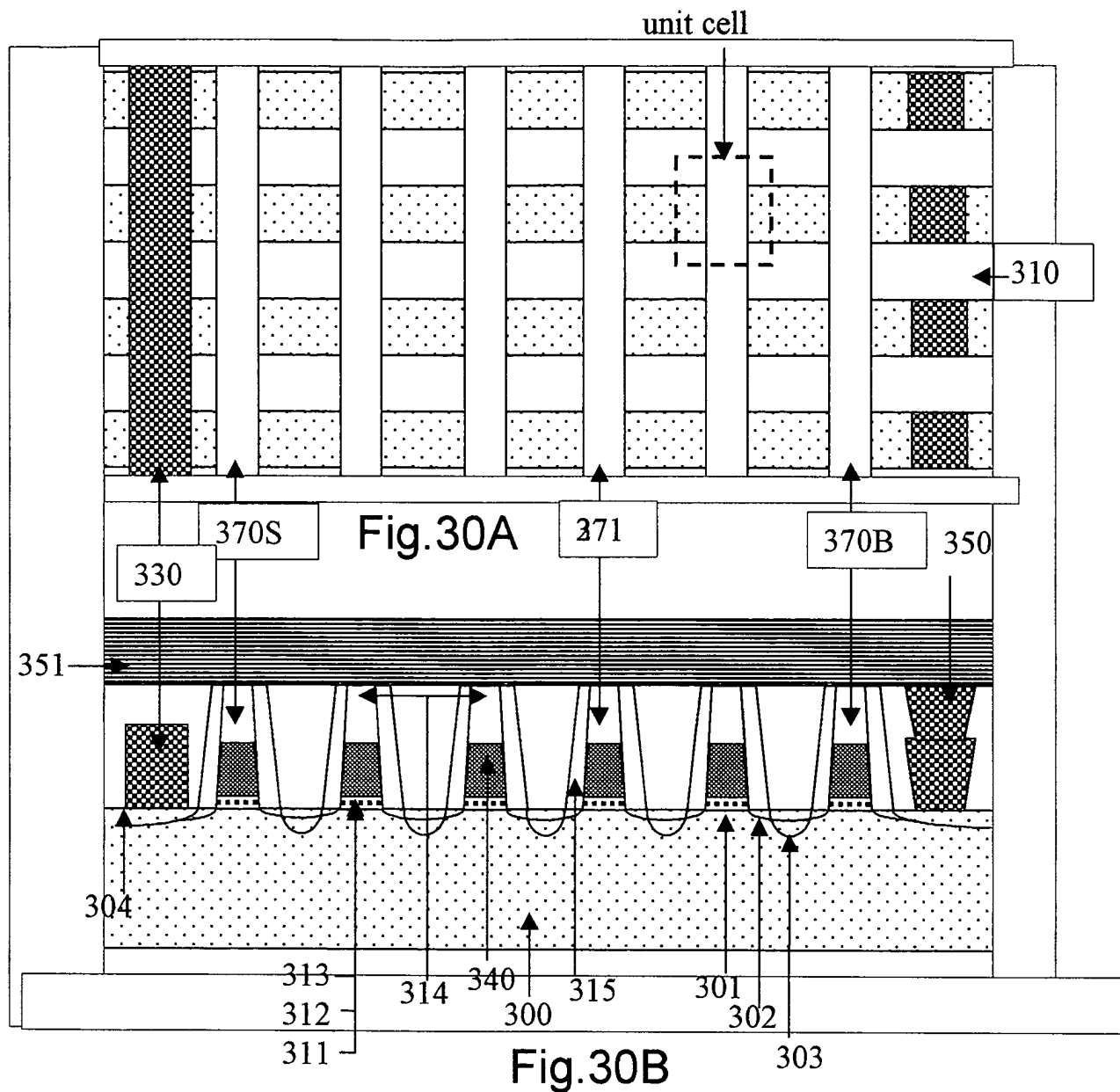
270 Control Gate Contact Cover

271 Word line Contact Cover









300 Substrate	310 STI	330 Local wiring
301 Control Gate Channel	311 ONO Bottom oxide	340 Control Gate Poly Si
302 Memory LDD	312 ONO Nitride	350 Bit Contact
303 Memory diffusion	313 ONO Top oxide	351 Bit Line (1st Metal)
304 Common Ground	314 CG Oxide Mask	370B Select Gate (Bit)
	315 Memory Spacer	370S Select Gate (Source)
		371 Control gate line

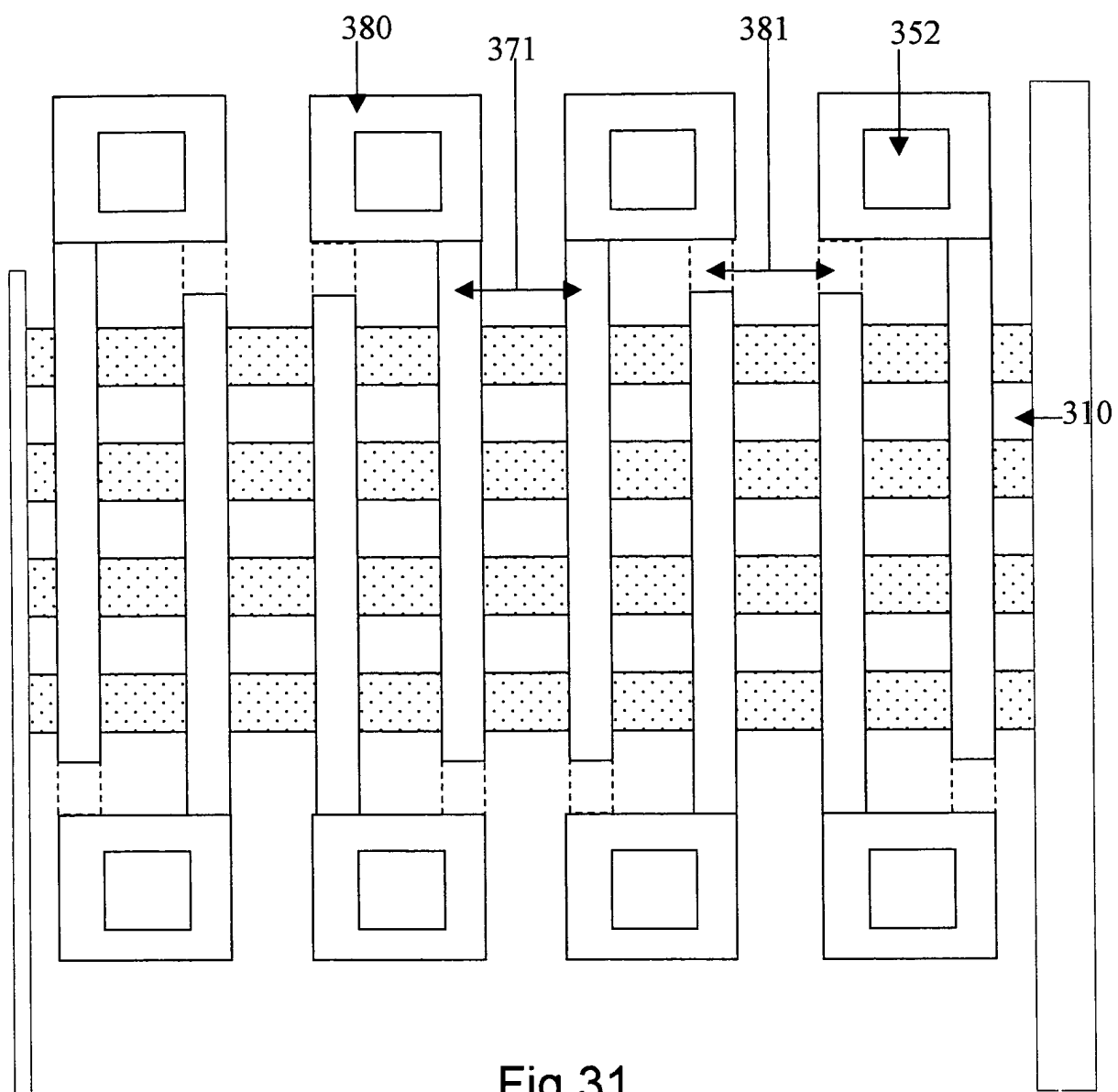


Fig.31

- 352 Control gate Contact
- 380 Control gate Contact Cover
- 381 Control gate Edge cut

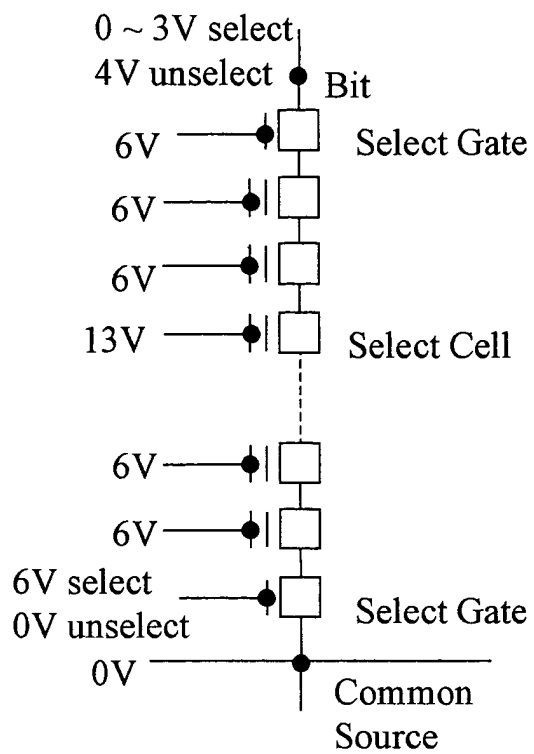


Fig.32A1

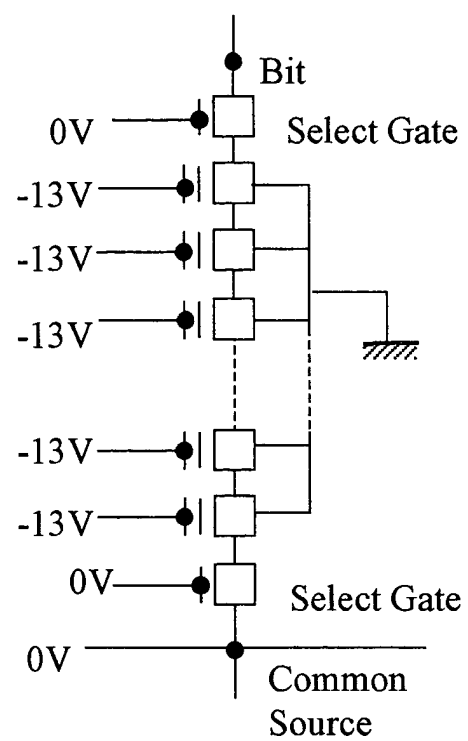


Fig.32A2

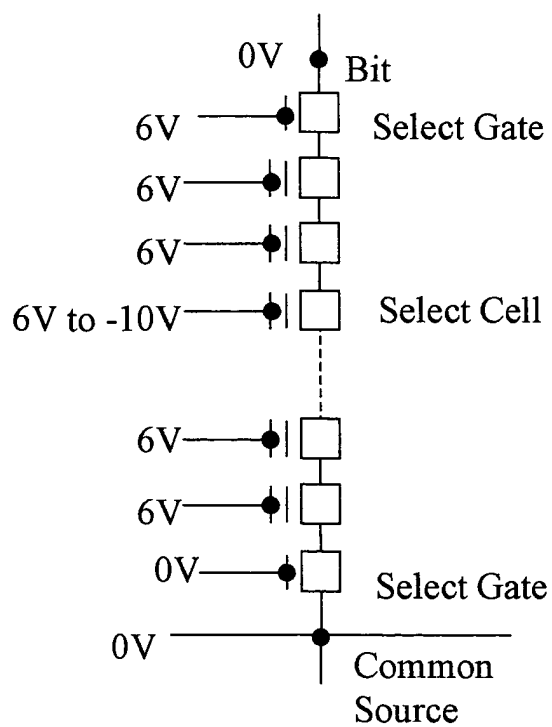


Fig.32B1

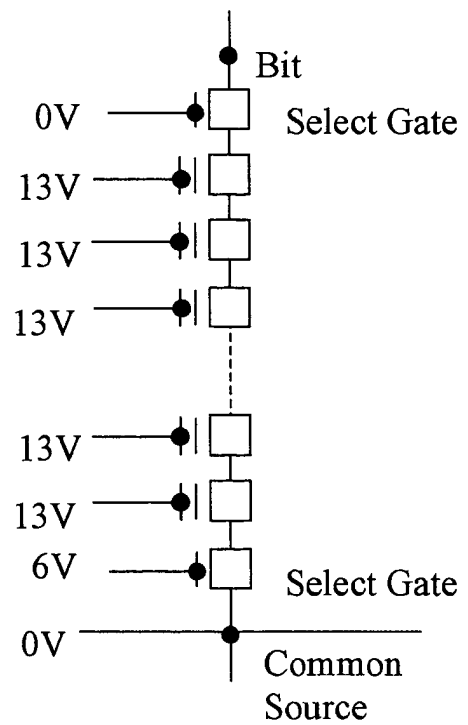
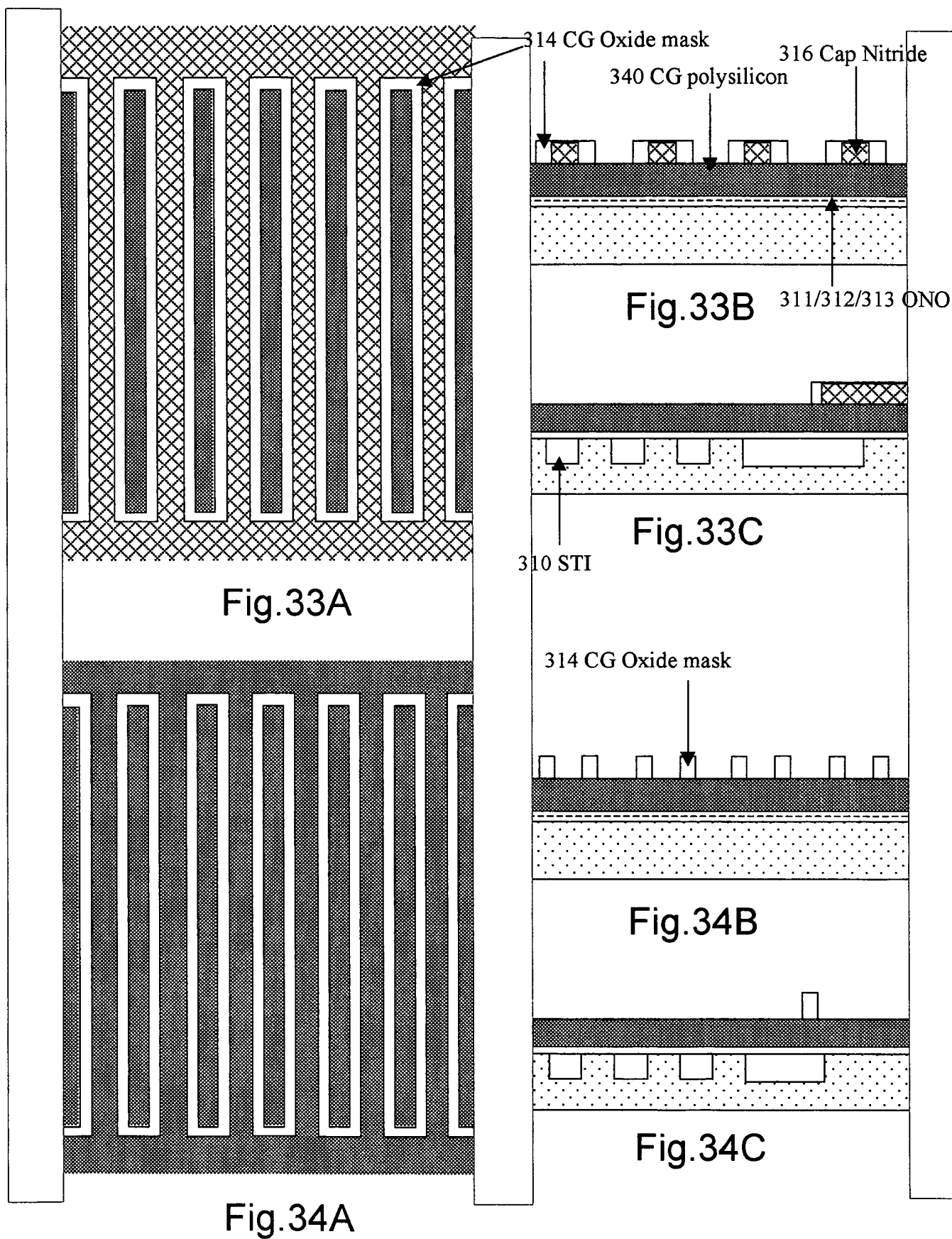


Fig.32B2



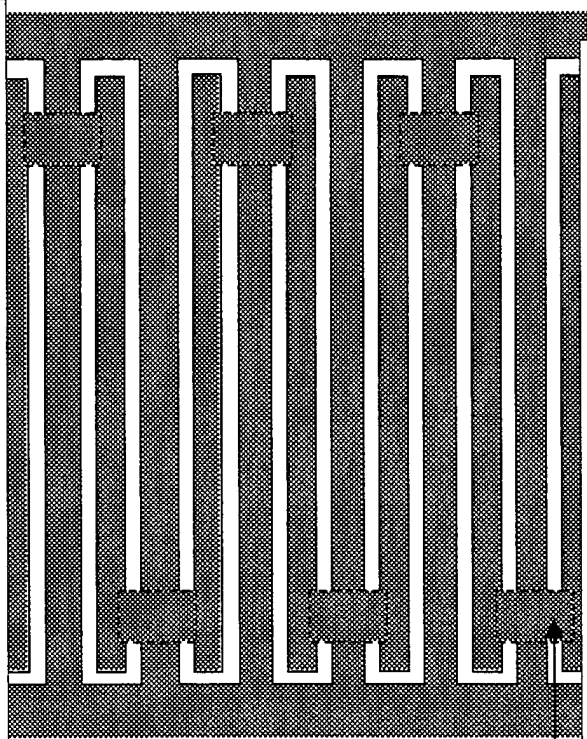


Fig. 35A

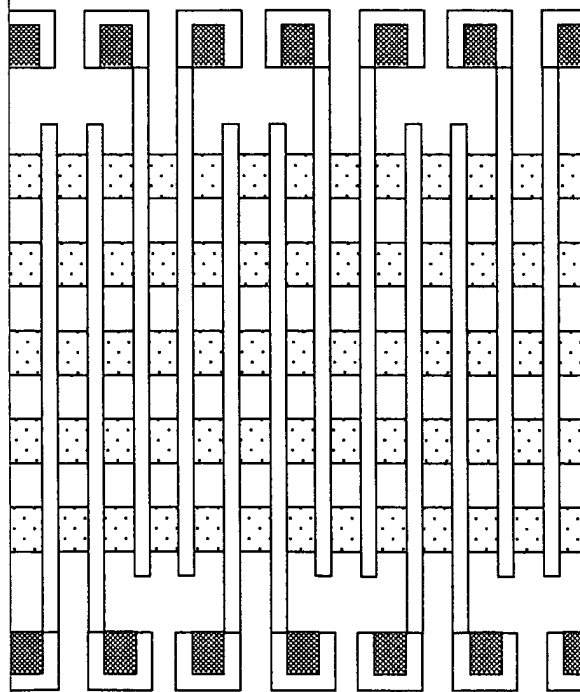


Fig. 36A

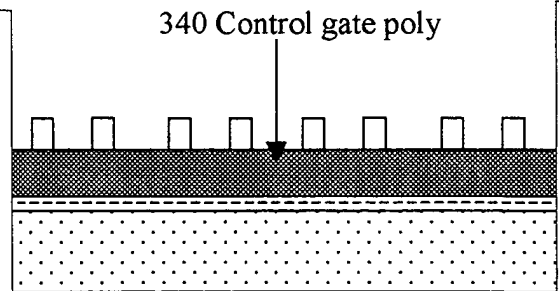


Fig. 35B

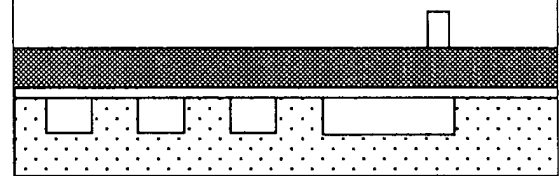


Fig. 35C

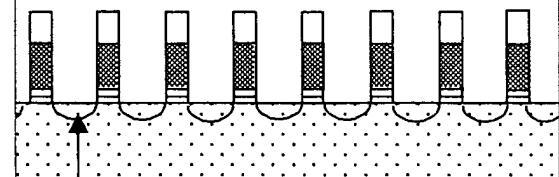


Fig. 36B

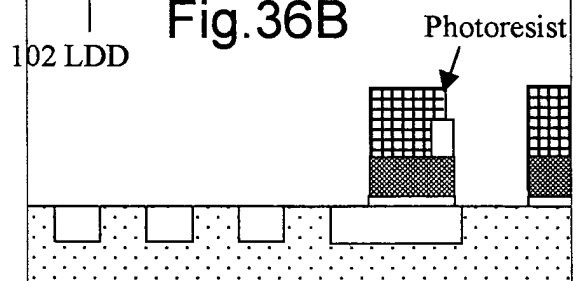
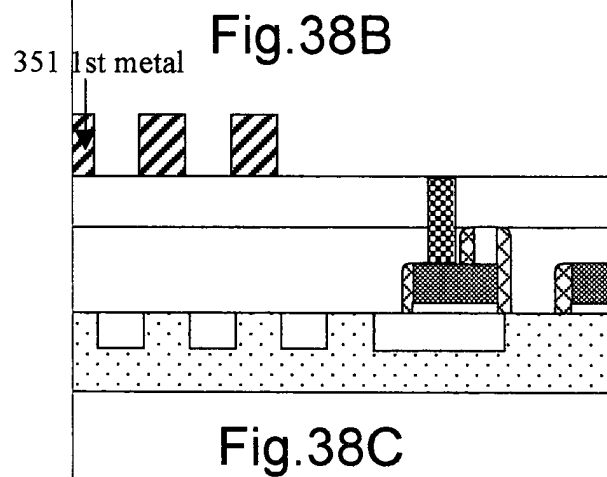
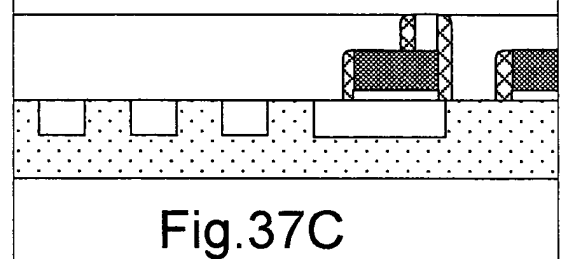
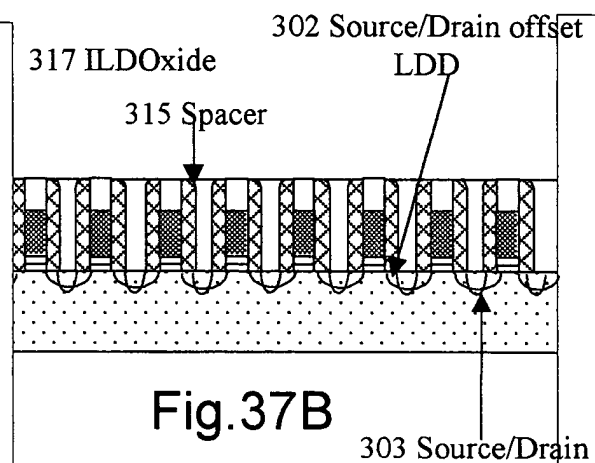
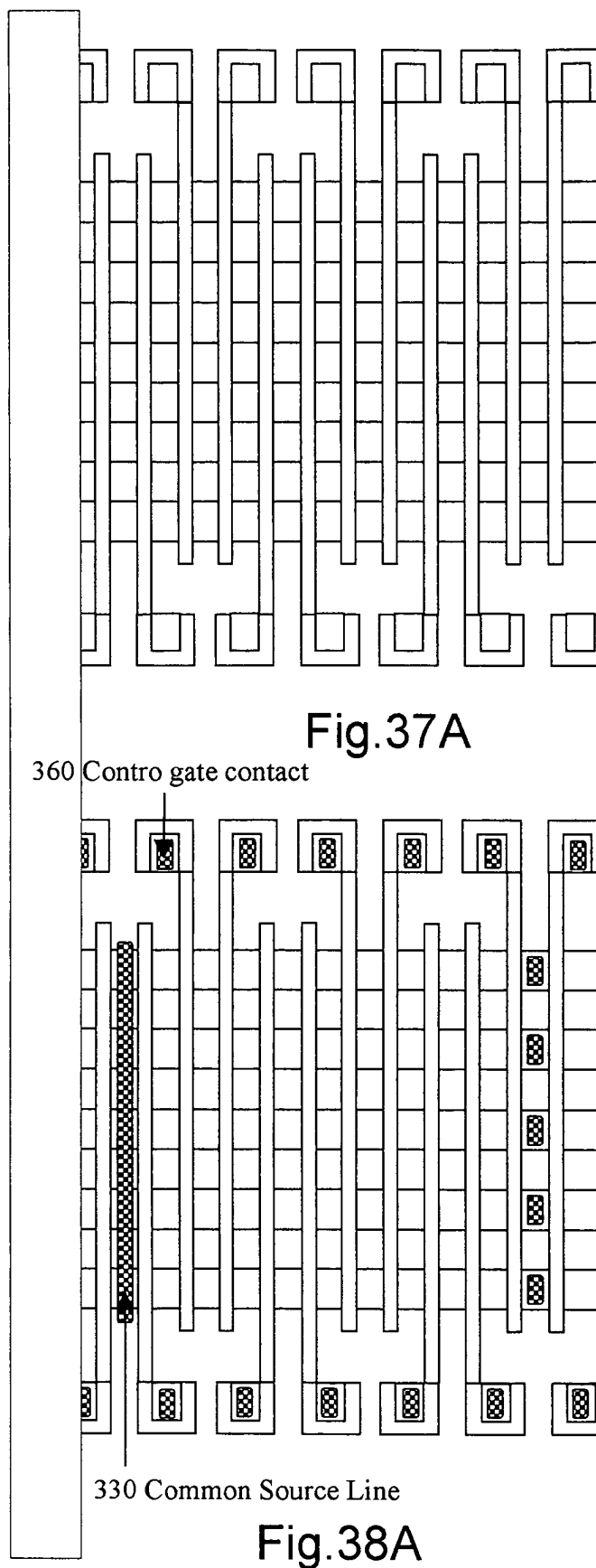


Fig. 36C



360 Contro gate contact

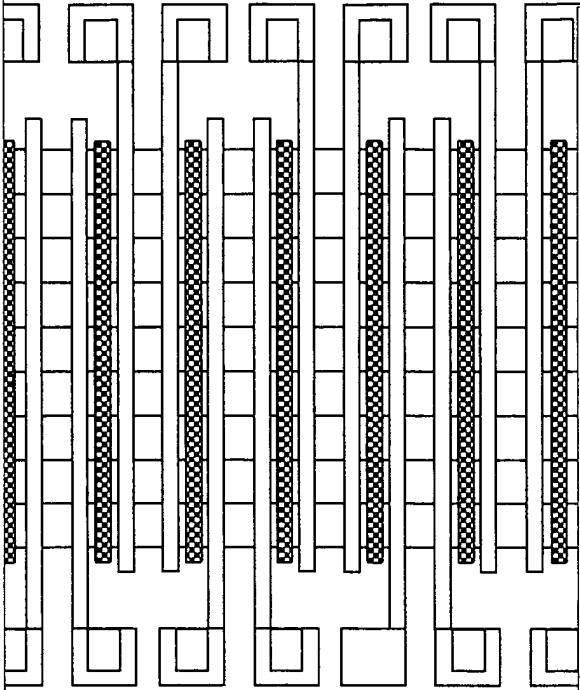


Fig.39A

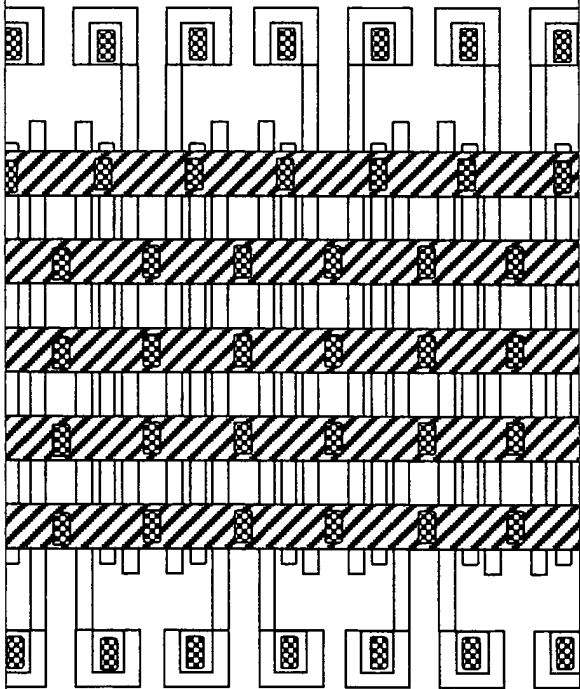


Fig.40A

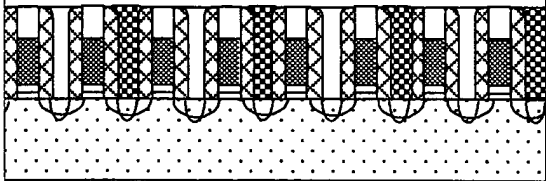


Fig.39B

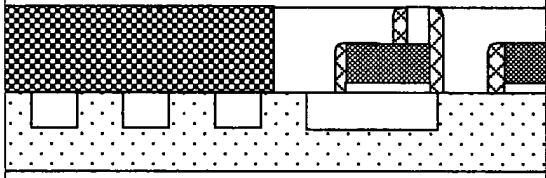


Fig.39C

351 1st metal

319 oxide

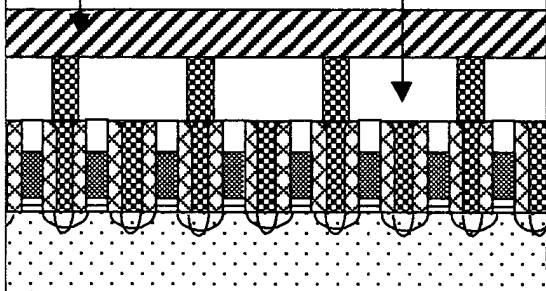


Fig.40B

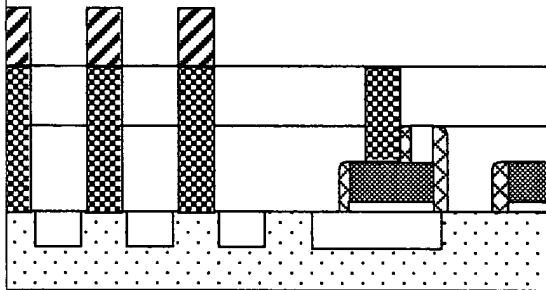


Fig.40C

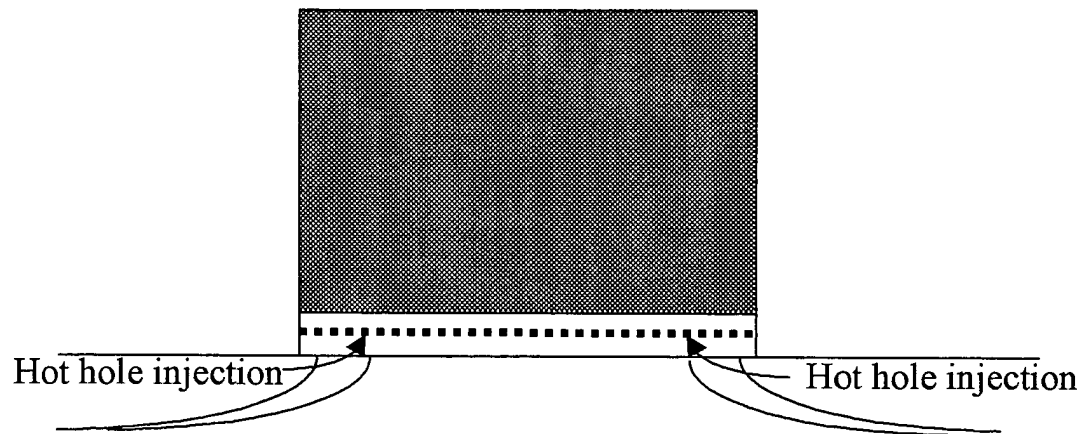


Fig.43

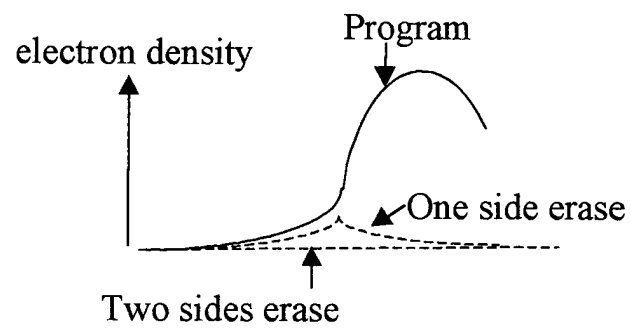


Fig.44